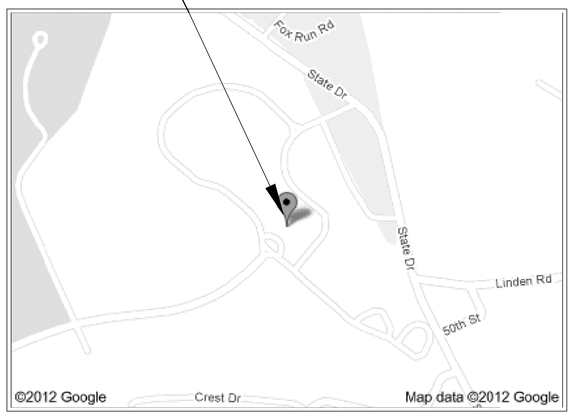
LEBANON - EMERGENCY CACHE

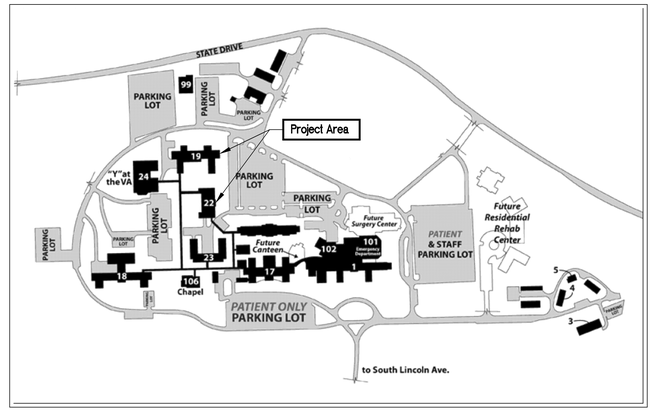
DEPARTMENT OF VETERANS AFFAIRS PROJECT NO. 595-11-127

LEBANON VA MEDICAL CENTER
ACQUISITIONS (BLDG 99)
1700 SOUTH LINCOLN AVENUE
LEBANON, PENNSYLVANIA

LEBANON VA MEDICAL CENTER



LOCATION MAP



SITE MAP

Department of Veterans Affairs

DRAWING INDEX

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

SPIEZLE ARCHITECTURAL GROUP, INC.
Architecture Planning Design
120 Sanhican Drive
Trenton, N.J. 08618
Phone 609.695.7400
Fax 609.394.2274

MILLER-REMICK LLC
PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA REGISTERED ENGINEER NO. PE034404-E

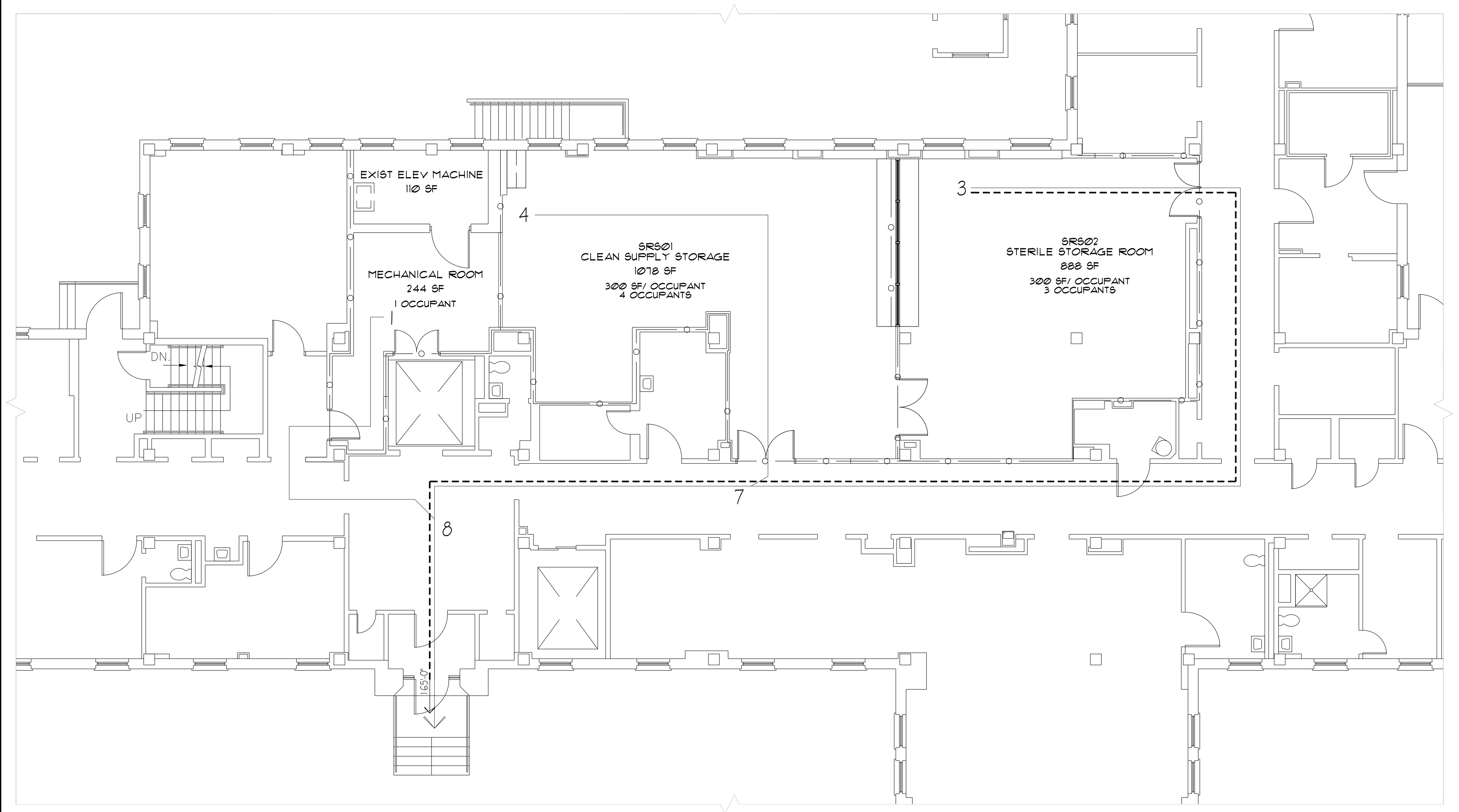
ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE - 1st FLOOR
CHERRY HILL, NEW JERSEY
08034 PHONE: (856)429-4000
FAX: (856)429-5002

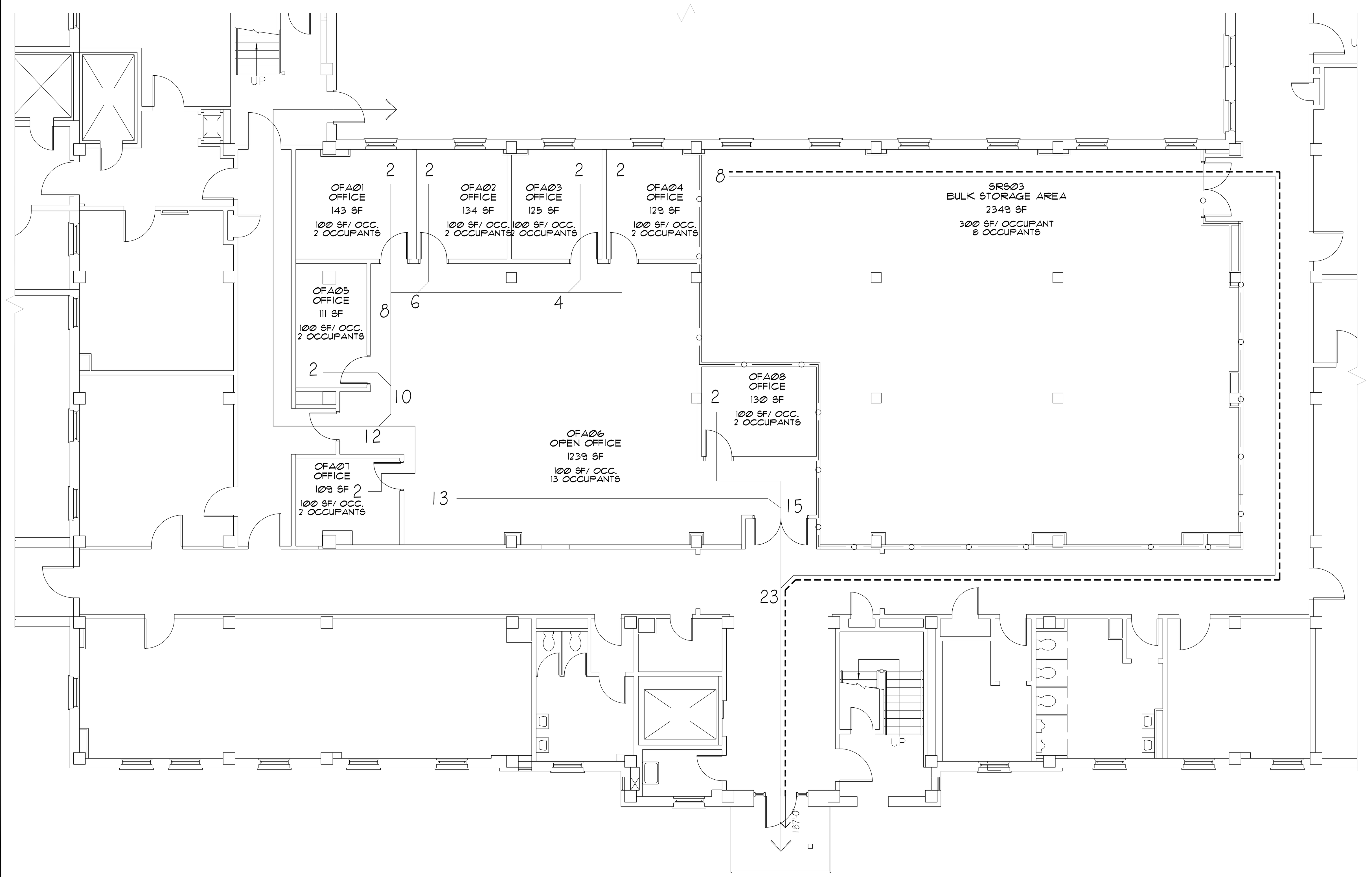
Drawing Title: COVER SHEET AND DRAWING INDEX
Approved: Project Director
Project Title: LEBANON - EMERGENCY CACHE
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013
Checked: MP
Drawn: RR
Project Number: VA595-11-127
Building Number: BLDGS. 19 & 22
Drawing Number: GI-001
Dwg.1 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



1 BUILDING 19 - CODE PLAN
1/8" = 1'-0"



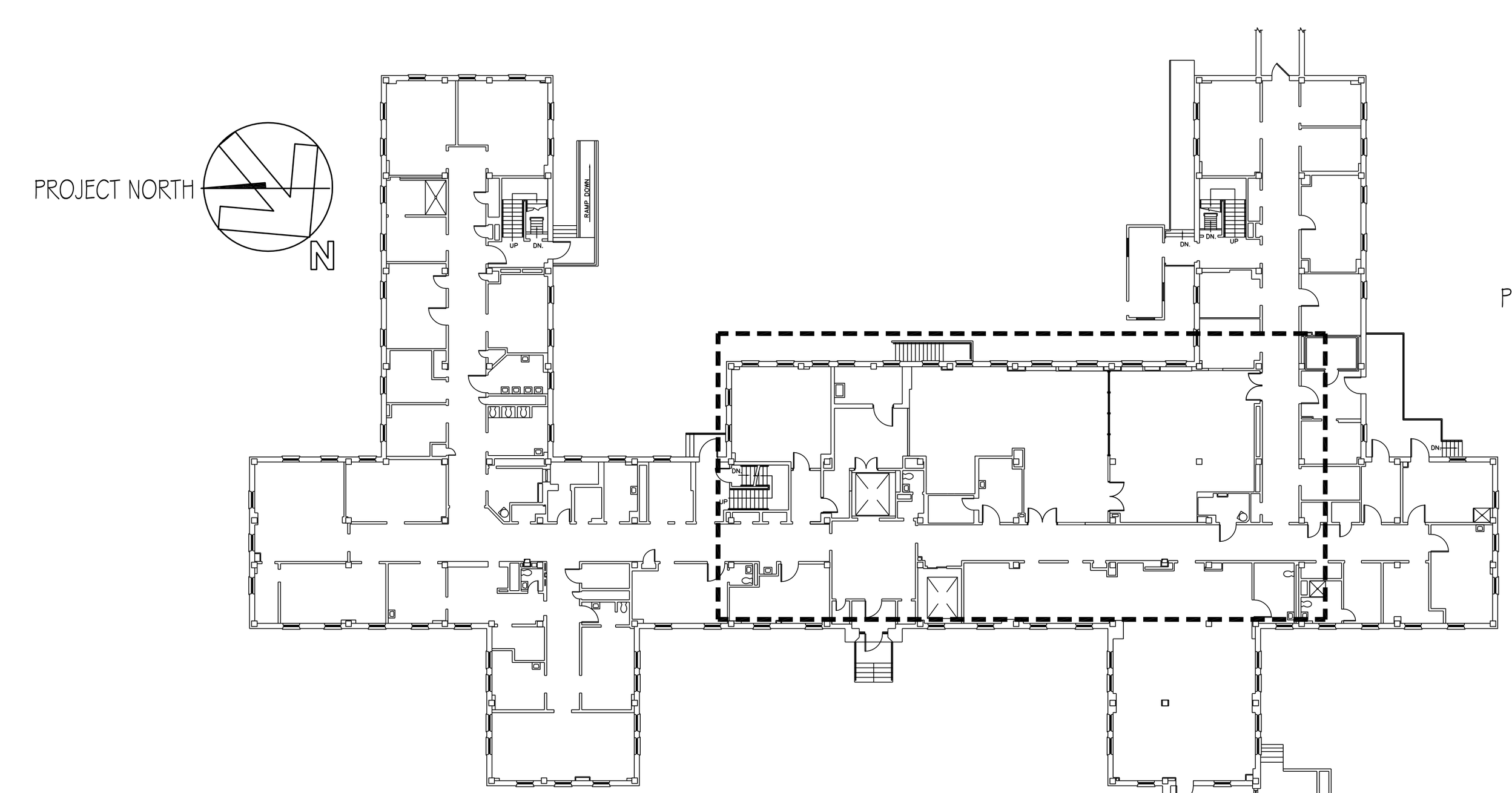
2 BUILDING 22- CODE PLAN
1/8" = 1'-0"

APPLICABLE CODES

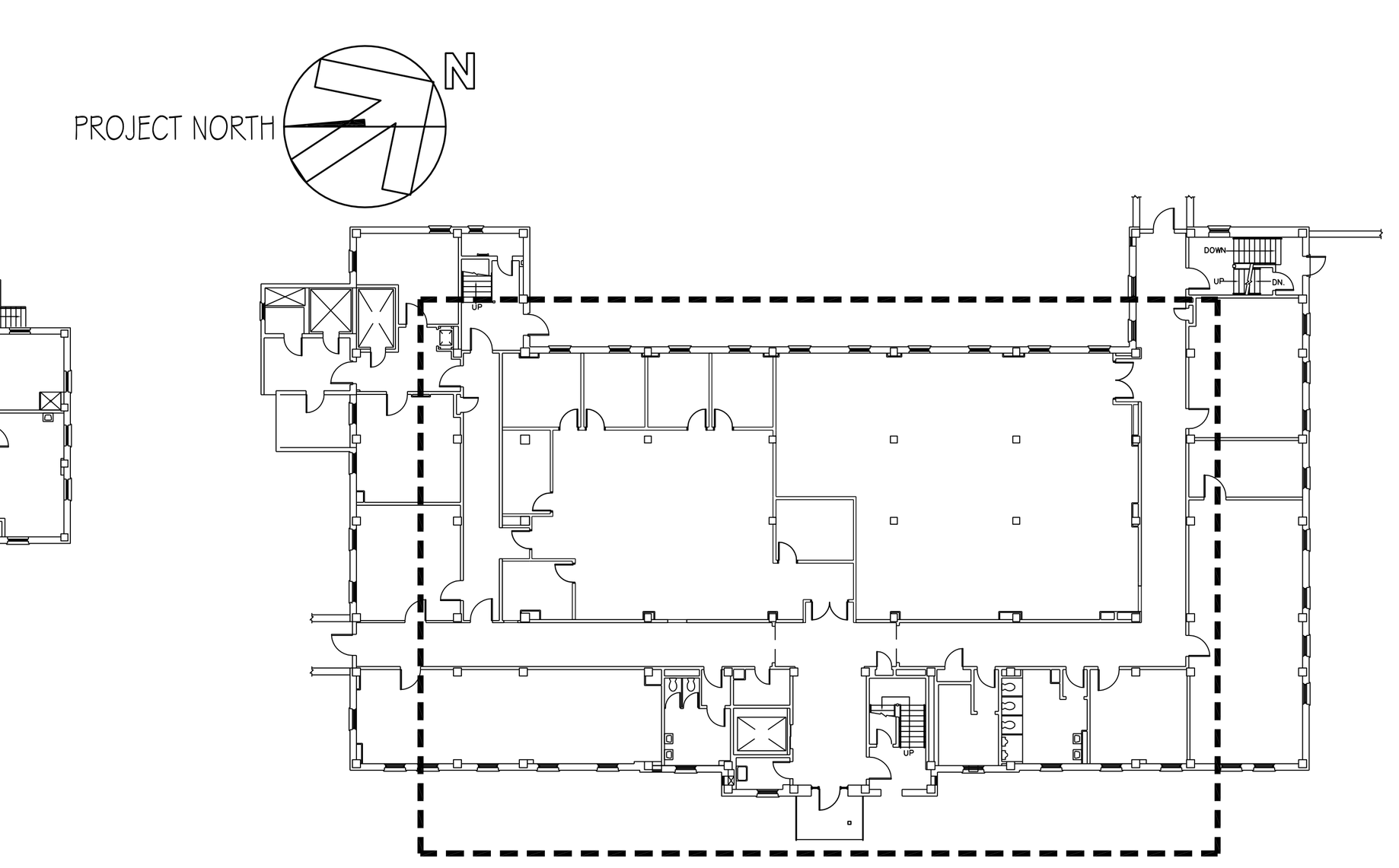
1. VA Fire Protection Design manual, 6th edition, 2011
2. NFPA 101, Life Safety Code, 2012
3. NFPA 1, Fire Code, 2012
4. NFPA 10, Standard for Portable Fire Extinguishers, 2013
5. NFPA 70, National Electrical Code, 2011
6. NFPA 72, National Fire Alarm and Signaling Code, 2013
7. NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems, 2012
8. NFPA 80, Standard for Fire Doors and other Opening Protectives, 2013
9. NFPA 105, Standard for Smoke Door Assemblies and other Opening Protectives, 2010
10. NFPA 241, Standard for Safeguarding Construction, Aleration, and Demolition Operations, 2012

LEGEND

Symbol	Meaning
—o—	FIRE BARRIER - 1 HR (U.L. # U905 OR # U906)
——	PATH OF EGRESS
◄—■■■■	MAXIMUM TRAVEL DISTANCE (FT)



KEY PLAN- BUILDING 19
1/32"= 1'-0"



KEY PLAN- BUILDING 22
1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

spiezle group

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

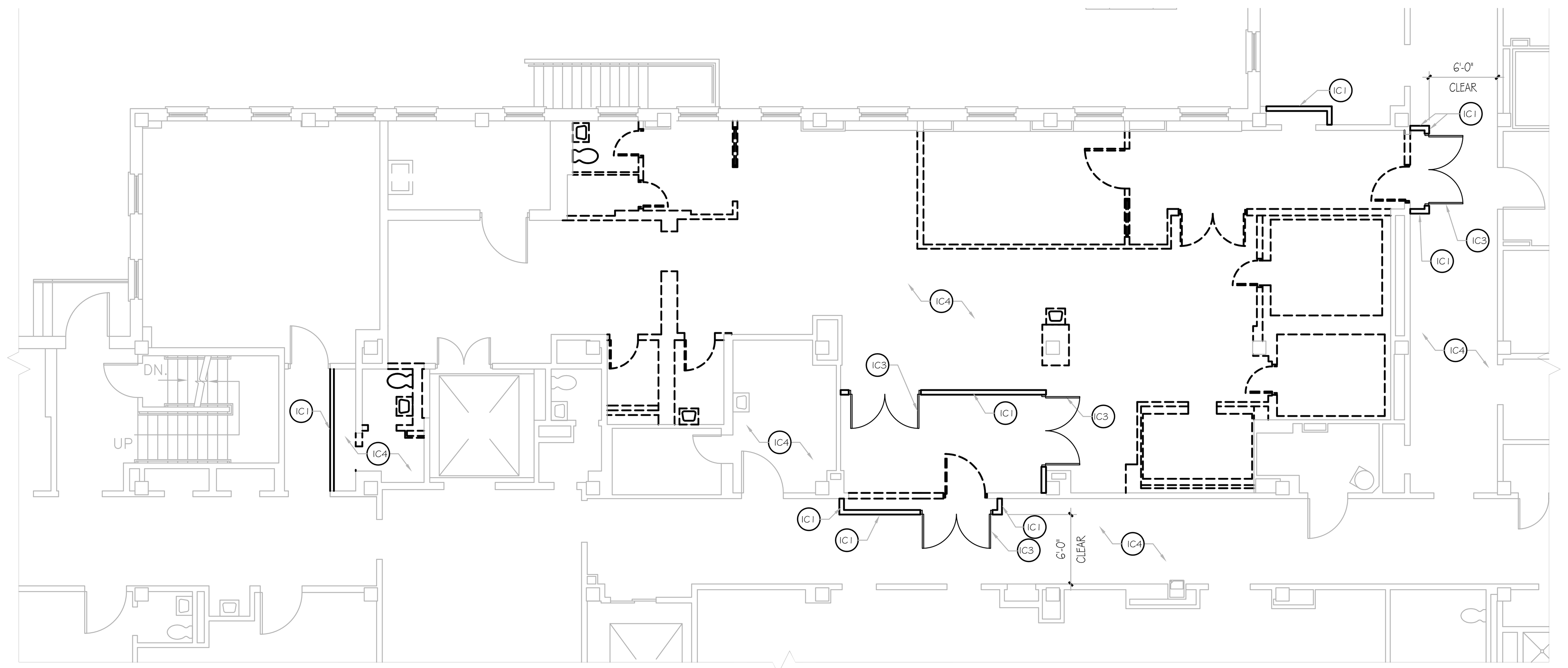
ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title	Project Title	Project Number
CODE PLAN ARCHITECTURAL	IMPROVE EMERGENCY CACHE - -	595-11-127
		Building Number: 19 and 22
Approved: Project Director	Location: VA MED. CENTER, LEBANON, PA	Drawing Number: CP–001
	Date: 04/10/2013 · Checked: SLM · Drawn: KAS	Dwg. 02 of 48

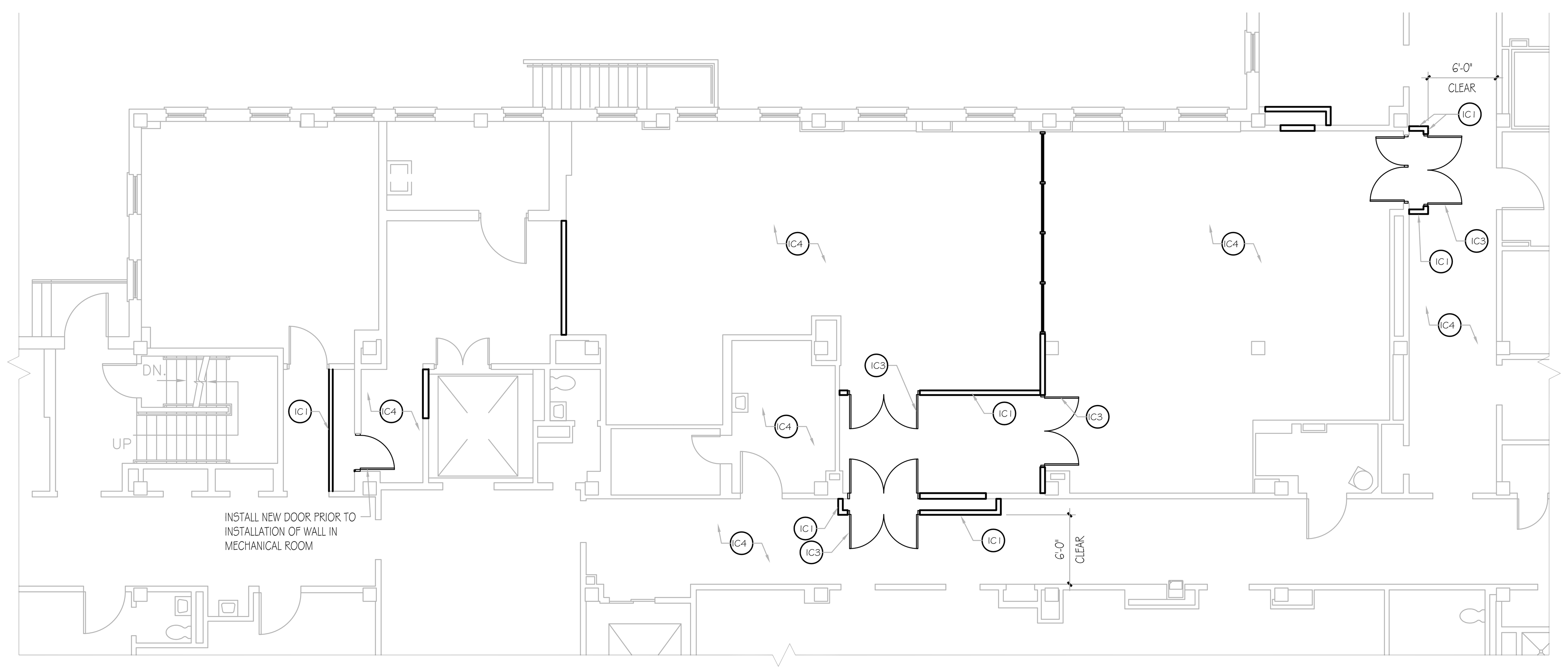
Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



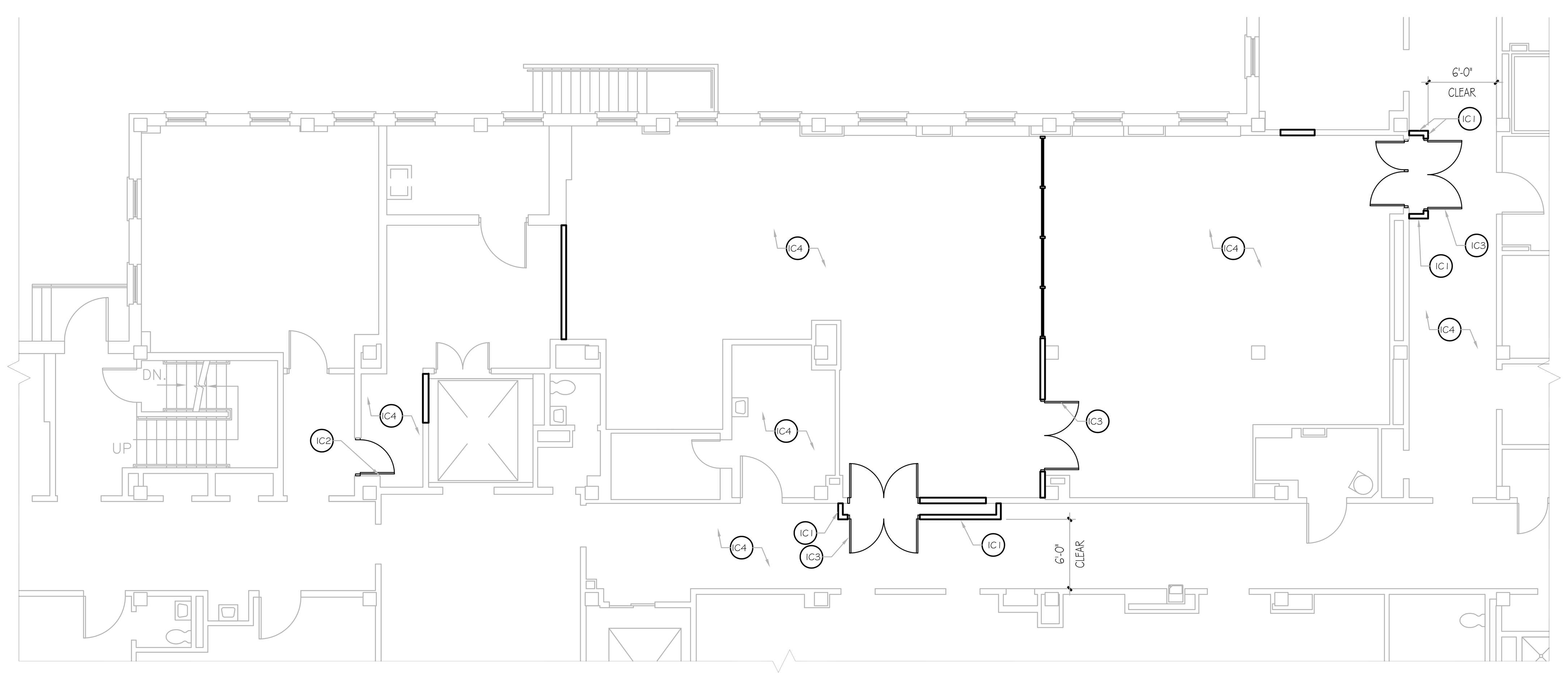
BUILDING 19- FIRST FLOOR PLAN- PHASE 1

1/8" = 1'-0"



BUILDING 19- FIRST FLOOR PLAN- PHASE 2

1/8" = 1'-0"



BUILDING 19- FIRST FLOOR PLAN- PHASE 3

1/8" = 1'-0"

ICRA MATRIX OF PRECAUTIONS FOR CONSTRUCTION

TYPE OF CONSTRUCTION:
TYPE C - WORK THAT GENERATES A MODERATE TO HIGH LEVEL OF DUST OR REQUIRES DEMOLITION OF REMOVAL OF ANY FIXED BUILDING COMPONENTS OR ASSEMBLIES. THIS WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

- SANDING OF WALLS FOR PAINTING OR WALL COVERING
- REMOVAL OF FLOOR COVERINGS, CEILING TILES, AND CASEWORK
- NEW WALL CONSTRUCTION
- MINOR DUCT WORK OR ELECTRICAL WORK ABOVE CEILINGS
- MAJOR CABLING ACTIVITIES
- ANY ACTIVITY THAT CANNOT BE COMPLETED WITHIN A SINGLE WORK SHIFT

PATIENT RISK GROUP:
GROUP 2 (MEDIUM RISK):

- RADIOLOGY/MRI

INFECTION CONTROL MATRIX - CLASS OF PRECAUTIONS

	CONSTRUCTION PROJECT TYPE			
PATIENT RISK GROUP	TYPE A	TYPE B	TYPE C	TYPE D
LOW RISK GROUP 1	I	II	II	III/IV
MEDIUM RISK GROUP 2	I	II	III	IV
HIGH RISK GROUP 3	I	III	III/IV	IV
HIGHEST RISK GROUP 4	II	III/IV	III/IV	IV

REQUIRED INFECTION CONTROL PRECAUTIONS (CLASS III)

1. EXECUTE WORK BY METHODS TO MINIMIZE RAISING DUST FROM CONSTRUCTION OPERATIONS.
2. IMMEDIATELY REPLACE A CEILING TILE DISPLACED FOR VISUAL INSPECTION.
3. PROVIDE ACTIVE MEANS TO PREVENT AIRBORNE DUST FROM DISPERSING INTO ATMOSPHERE.
4. WATER MIST WORK SURFACES TO CONTROL DUST WHILE CUTTING.
5. SEAL UNUSED DOORS WITH DUCT TAPE.
6. BLOCK OFF AND SEAL AIR VENTS.
7. REPLACE ADHESIVE WALK-OFF MATS AT ENTRANCE AND EXIT OF WORK AREAS. REPLACE USED MATS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. REMOVE OR ISOLATE HVAC SYSTEM IN AREA WHERE WORK IS BEING DONE TO PREVENT CONTAMINATION OF DUCT SYSTEM.
9. OBTAIN INFECTION CONTROL PERMIT FROM HOSPITAL SAFETY OFFICER OR FACILITIES MANAGEMENT MAINTENANCE AND ENGINEERING DEPARTMENT BEFORE CONSTRUCTION BEGINS.
10. REMOVE OR ISOLATE HVAC SYSTEM IN AREA WHERE WORK IS BEING DONE TO PREVENT CONTAMINATION OF DUCT SYSTEM.
11. COMPLETE ALL CRITICAL BARRIERS BEFORE CONSTRUCTION BEGINS OR IMPLEMENT CONTROL CUBE METHOD.
12. MAINTAIN NEGATIVE AIR PRESSURE WITHIN WORK SITE UTILIZING HEPA-EQUIPPED AIR FILTRATION UNITS.
13. CONTAIN CONSTRUCTION WASTE BEFORE TRANSPORT IN TIGHTLY COVERED CONTAINERS.
14. COVER TRANSPORT RECEPTACLES OR CARTS. TAPE COVERS.
15. WET MOP AND/OR VACUUM WITH HEPA FILTERED VACUUM BEFORE LEAVING WORK AREAS.
16. REMOVE ISOLATION OF HVAC SYSTEM IN AREAS WHERE WORK IS BEING PERFORMED.

PHASING GENERAL NOTES:

1. CONTRACTOR TO COORDINATE WITH HOSPITAL ANY SHUT-DOWN (MEP, ELEVATOR, BLOCKING OF ENTRANCES) TO INSURE THE OPERATION AND SERVICES OF ALL OCCUPIED AREAS OUTSIDE CONSTRUCTION AREA.

2. CONSTRUCT TEMPORARY PARTITIONS/BARRIERS AS PER SPECIFICATIONS SECTION 015000 FOR POLUTION CONTROL AND TO SEPARATE CONSTRUCTION WORK FROM OTHER AREAS OF THE BUILDING. ALL TEMPORARY PARTITIONS MUST STAY IN PLACE UNTIL THE CEILING IS INSTALLED AND THE ONLY WORK LEFT TO BE DONE IS MINOR FINISHES AND PUNCHLIST ITEMS.

3. PRIOR TO PARTIAL OWNER OCCUPANCY OF EACH PHASE, MECHANICAL AND ELECTRICAL SYSTEMS ARE TO BE FULLY OPERATIONAL.

4. PROVIDE SCHEDULE TO OWNER/ARCHITECT THAT SHOWS THE FOLLOWING:
   - BEGINNING AND END DATES OF EACH PHASE
   - DATES THAT COORDINATE SHUT-DOWN AND TIE-INS
   - ALL OTHER IMPORTANT INFORMATION THAT WILL AFFECT THE OWNERS OCCUPANCY OF AREAS OUTSIDE THE LIMIT OF WORK.

5. NOTIFY IN WRITING TO OWNER AND ARCHITECT, WITHIN SEVEN WORKING DAYS, AREAS OF THE BUILDING TO BE TURNED-OVER FOR CONSTRUCTION.

6. PERFORM THE NECESSARY DEMOLITION WORK REQUIRED TO COMPLETE THE NEW WORK ON EACH PHASE. REFER TO DEMOLITION PLANS AND NOTES ON SHEET D-1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHAT PORTION OF THE OVERALL DEMOLITION WORK IS REQUIRED FOR EACH PHASE.

GENERAL NOTES:

1. MAINTAIN SAFE EGRESS FROM ALL WORK AREAS AT ALL TIMES.
2. PROVIDE AND COORDINATE INFECTION CONTROL MEASURES WITH OWNER TO MITIGATE IMPACT ON HOSPITAL AND OCCUPANTS. PROVIDE ENCLOSURE OF WORK AREAS, AS DETAILED AND AS REQUIRED FOR INFECTION CONTROL, DUST MITIGATION, AIR SYSTEM SEPARATION, NOISE MITIGATION, AND CONTROL OF OTHER HAZARDS TO OCCUPANTS.
3. PHASE THE WORK SUCH THAT INFECTION CONTROL PROVISIONS MAY BE USED TO THEIR FULLEST EXTENT.
4. BEFORE BEGINNING WORK IN CEILING PLENUMS, VERIFY PROPER CONTAINMENT OF PERIMETER WALLS, FIRESAFING, ETC. NO DUST OR OTHER HAZARD MAY IMPACT SPACES SURROUNDING THE WORK ZONE.
5. MAINTAIN MINIMUM 4'-0" CORRIDOR WIDTHS FOR OCCUPANTS OF BUILDING AT ALL TIMES.
6. ANY WORK IN A PHASE INCLUDING BUT NOT LIMITED TO ELECTRICAL, PLUMBING, OR HVAC WHICH SUPPORTS WORK IN A LATER PHASE OR SEPARATE LOCATION, SHALL BE MAINTAINED BY APPROVED TEMPORARY CONNECTIONS UNTIL LATER PHASE IS COMPLETE.

(#) ICRA KEYNOTES:

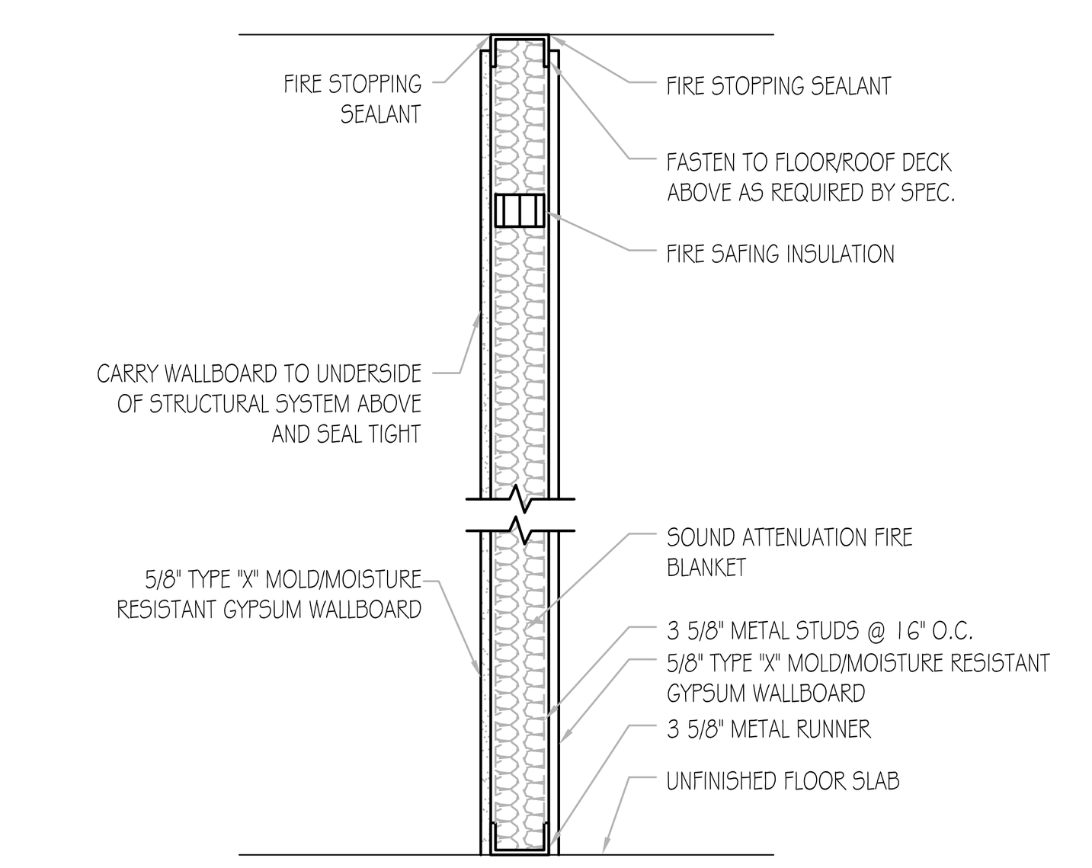
(IC1) PROVIDE TEMPORARY CONSTRUCTION/INFECTION ENCLOSURE PER PARTITION DETAIL 3/CP-001. TEMPORARY PARTITION MAY BE REMOVED WHEN APPROPRIATE AND WHEN OTHER PROVISIONS MAY BE UTILIZED SUCH AS NOTE IC2. USE A PLASTIC ZIPPER WALL TO COVER DOORS.

(IC2) PROVIDE EXISTING DOOR WITH GASKETING TO PREVENT THE MOVEMENT OF DUST.

(IC3) AFTER NEW ONE HOUR RATED DOOR INSTALLED, FOLLOW NOTE IC2.

(IC4) COORDINATE WITH MEP DEMOLITION AND NEW WORK DRAWINGS FOR EXTENT OF ICRA PROVISIONS THAT MAY BE REQUIRED OUTSIDE OF SPECIFIC ROOM NOTES SHOWN. SOME AREAS OF ADJACENT ROOMS AND/OR CORRIDORS MAY BE AFFECTED BY MEP SCOPE. NOTE IC4 IS SHOWN WHERE SUCH WORK IS SUSPECTED, BUT ADDITIONAL AREAS MAY BE AFFECTED AS WELL.

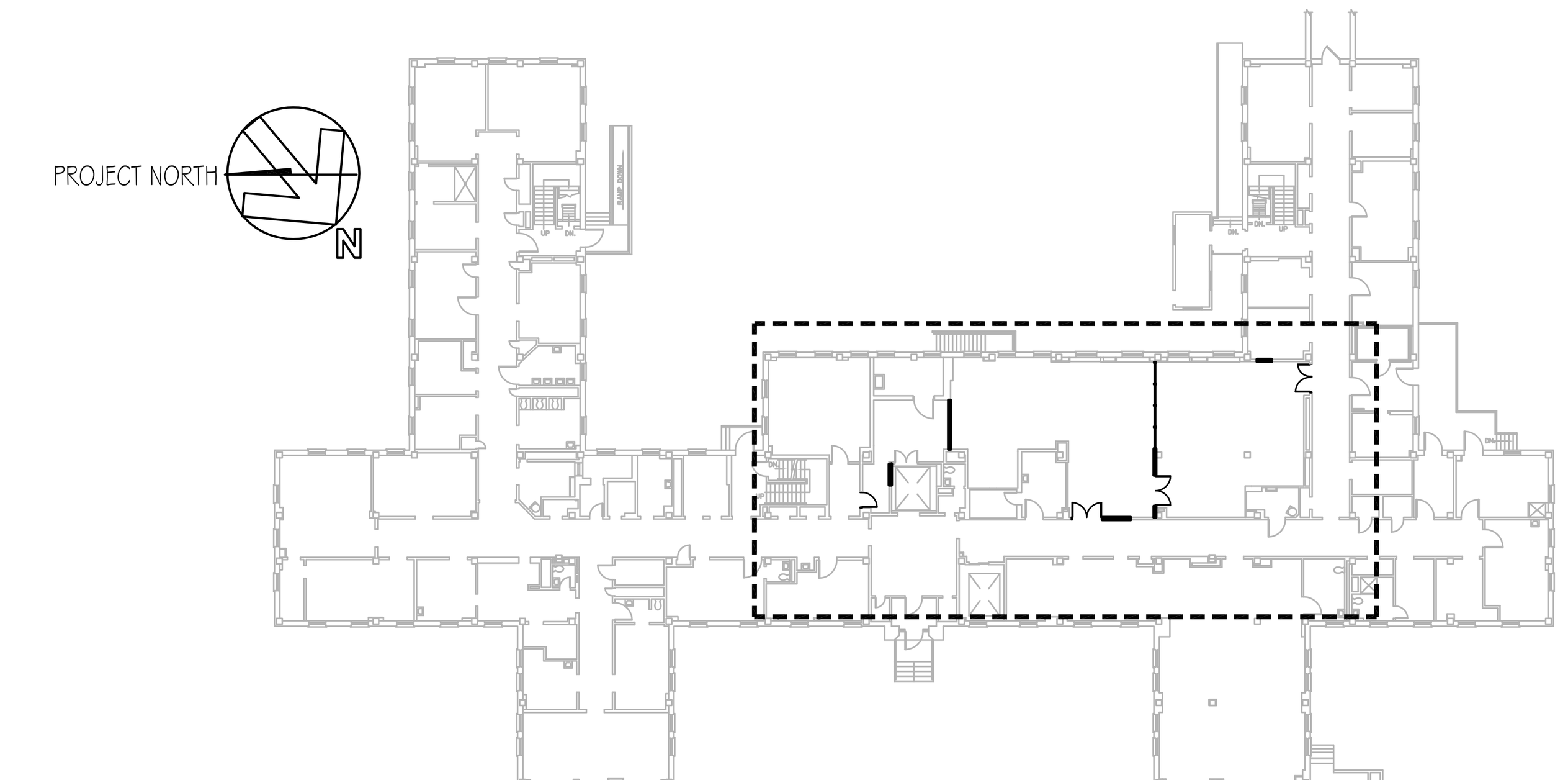
(IC5) ALL WORK IN THIS AREA TO BE COMPLETED OUTSIDE OF THE OPERATIONAL HOURS OF MONDAY THROUGH FRIDAY 7:00 TO 16:30. CORRIDOR AND ENTRANCE SHALL REMAIN OPEN AND SUITABLE FOR USE EACH DAY. COORDINATE WORK HOURS WITH OWNER.



TEMPORARY CONSTRUCTION PARTITION

1" = 1'-0"

ONE HOUR RATED PARTITION UL #U419



KEY PLAN- BUILDING 19

1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions	Date

CONSULTANTS:

spiezle group

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

ARCHITECT/ENGINEERS:

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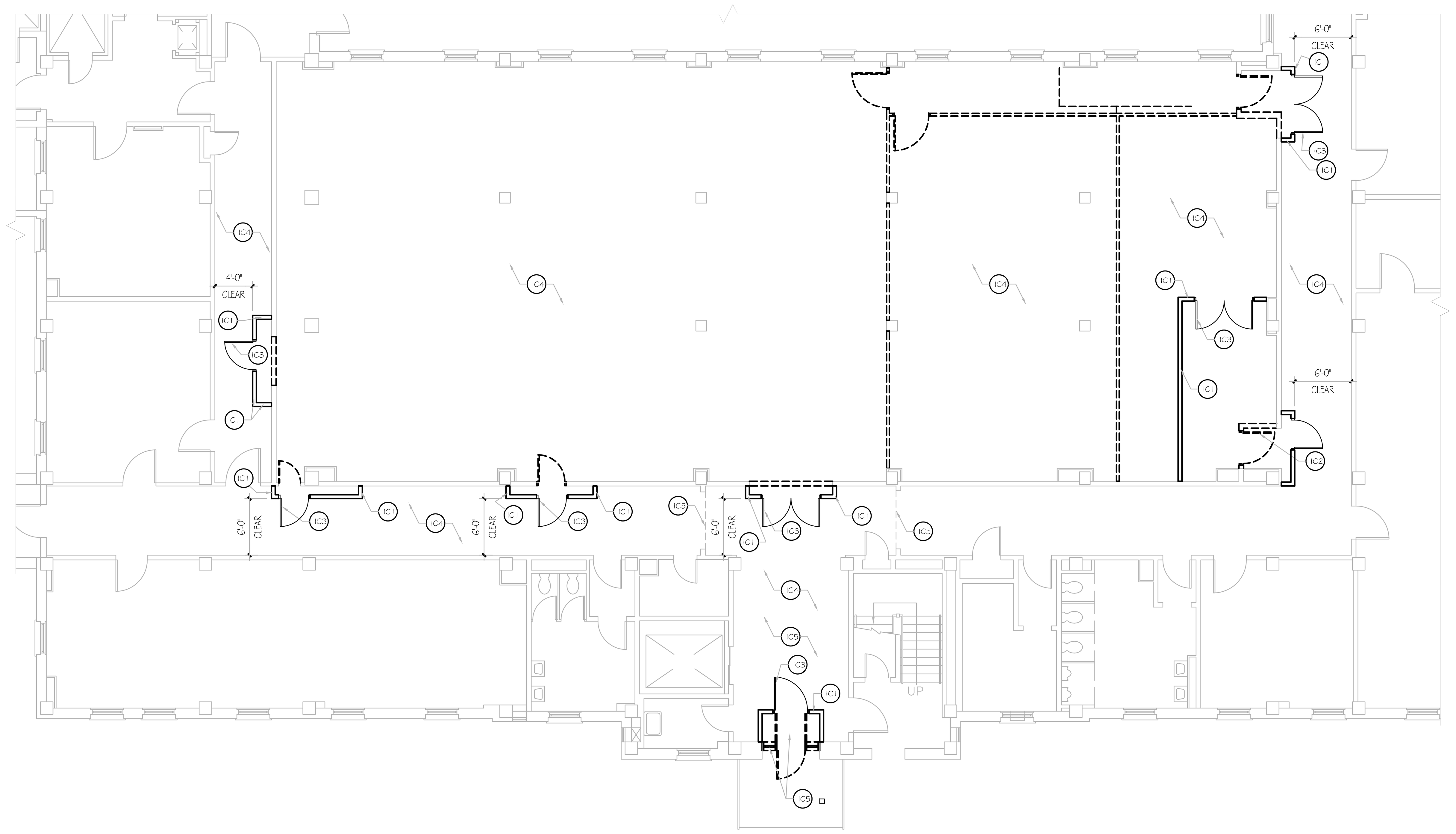
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title	Project Title	Project Number
ICRA AND PHASING PLANS ARCHITECTURAL	IMPROVE EMERGENCY CACHE - -	595-11-127
		Building Number: 19 and 22
Approved: Project Director	Location: VA MED. CENTER, LEBANON, PA	Drawing Number: CP–002
	Date: 04/10/2013; Checked: SLM; Drawn: KAS	Dwg. 03 of 47

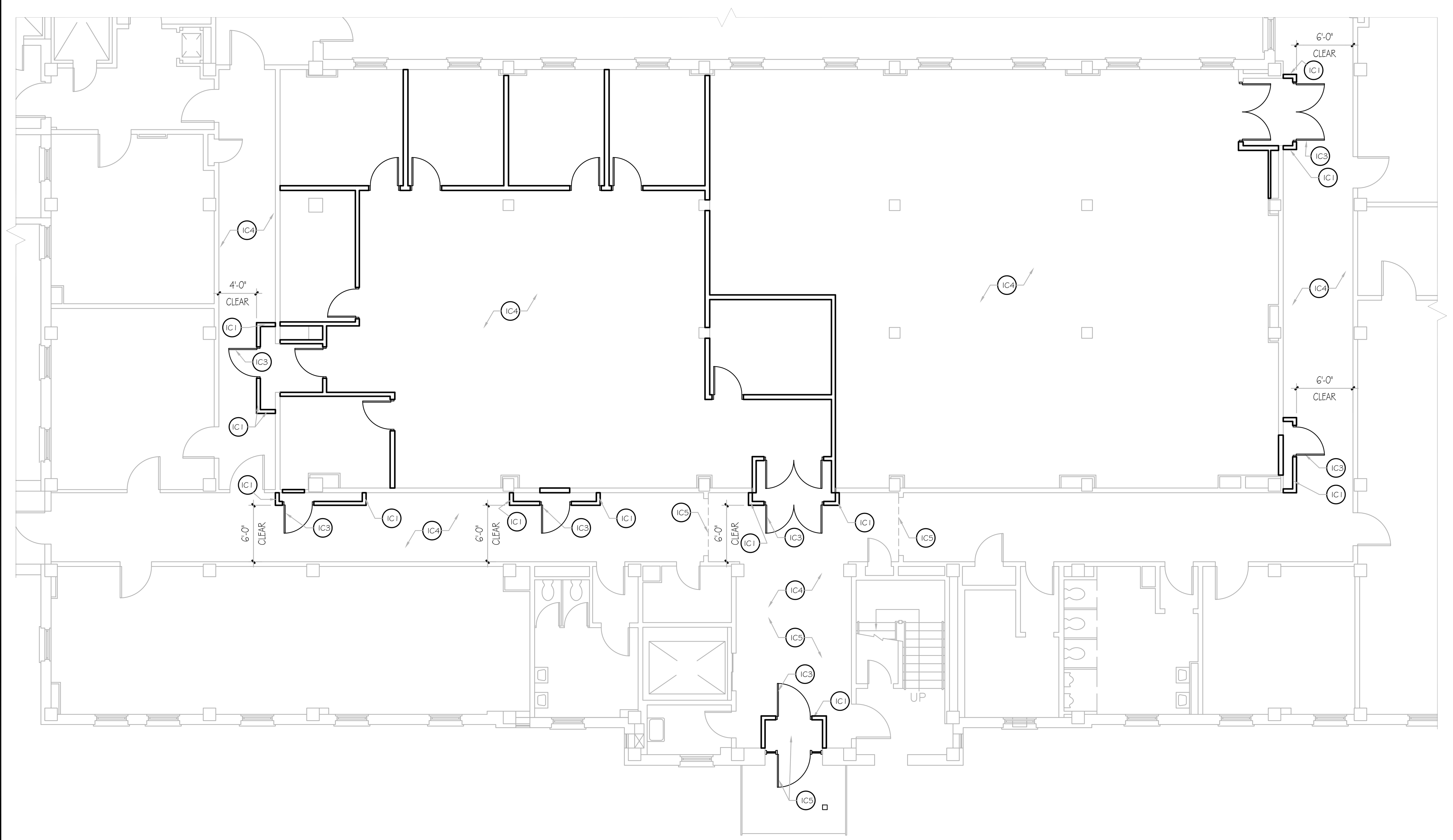
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



4 BUILDING 22- FIRST FLOOR PLAN- PHASE 1
1/8" = 1'-0"



5 BUILDING 22- FIRST FLOOR PLAN- PHASE 2
1/8" = 1'-0"

ICRA MATRIX OF PRECAUTIONS FOR CONSTRUCTION

TYPE OF CONSTRUCTION:
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PATIENT RISK GROUP:
GROUP 2 (MEDIUM RISK):
- RADIOLOGY/MRI

INFECTION CONTROL MATRIX - CLASS OF PRECAUTIONS

	CONSTRUCTION PROJECT TYPE			
PATIENT RISK GROUP	TYPE A	TYPE B	TYPE C	TYPE D
LOW RISK GROUP 1	I	II	II	III/IV
MEDIUM RISK GROUP 2	I	II	III	IV
HIGH RISK GROUP 3	I	III	III/IV	IV
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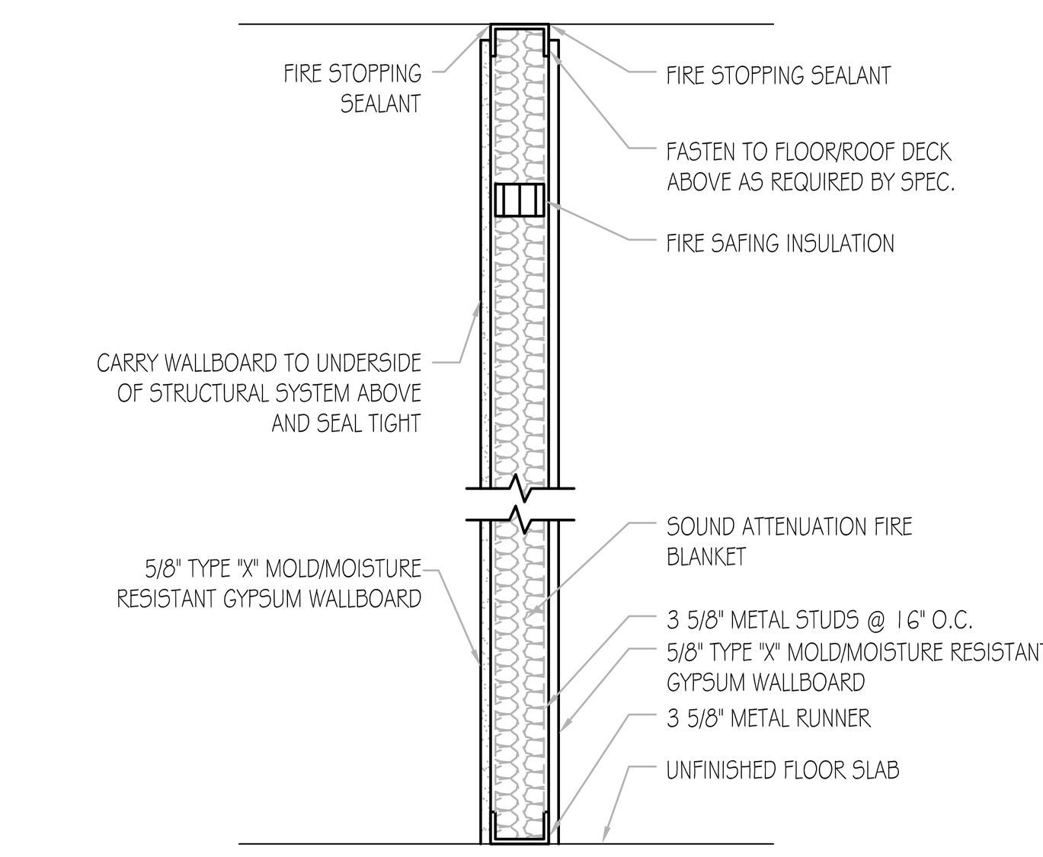

TEMPORARY CONSTRUCTION PARTITION
1" = 1'-0"
ONE HOUR RATED PARTITION UL #U419

PHASING GENERAL NOTES:

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5. NOTIFY IN WRITING TO OWNER AND ARCHITECT, WITHIN SEVEN WORKING DAYS, AREAS OF THE BUILDING TO BE TURNED-OVER FOR CONSTRUCTION.

6. PERFORM THE NECESSARY DEMOLITION WORK REQUIRED TO COMPLETE THE NEW WORK ON EACH PHASE. REFER TO DEMOLITION PLANS AND NOTES ON SHEET D-1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHAT PORTION OF THE OVERALL DEMOLITION WORK IS REQUIRED FOR EACH PHASE.

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IC2 PROVIDE EXISTING DOOR WITH GASKETING TO PREVENT THE MOVEMENT OF DUST.

IC3 AFTER NEW ONE HOUR RATED DOOR INSTALLED, FOLLOW NOTE IC2.

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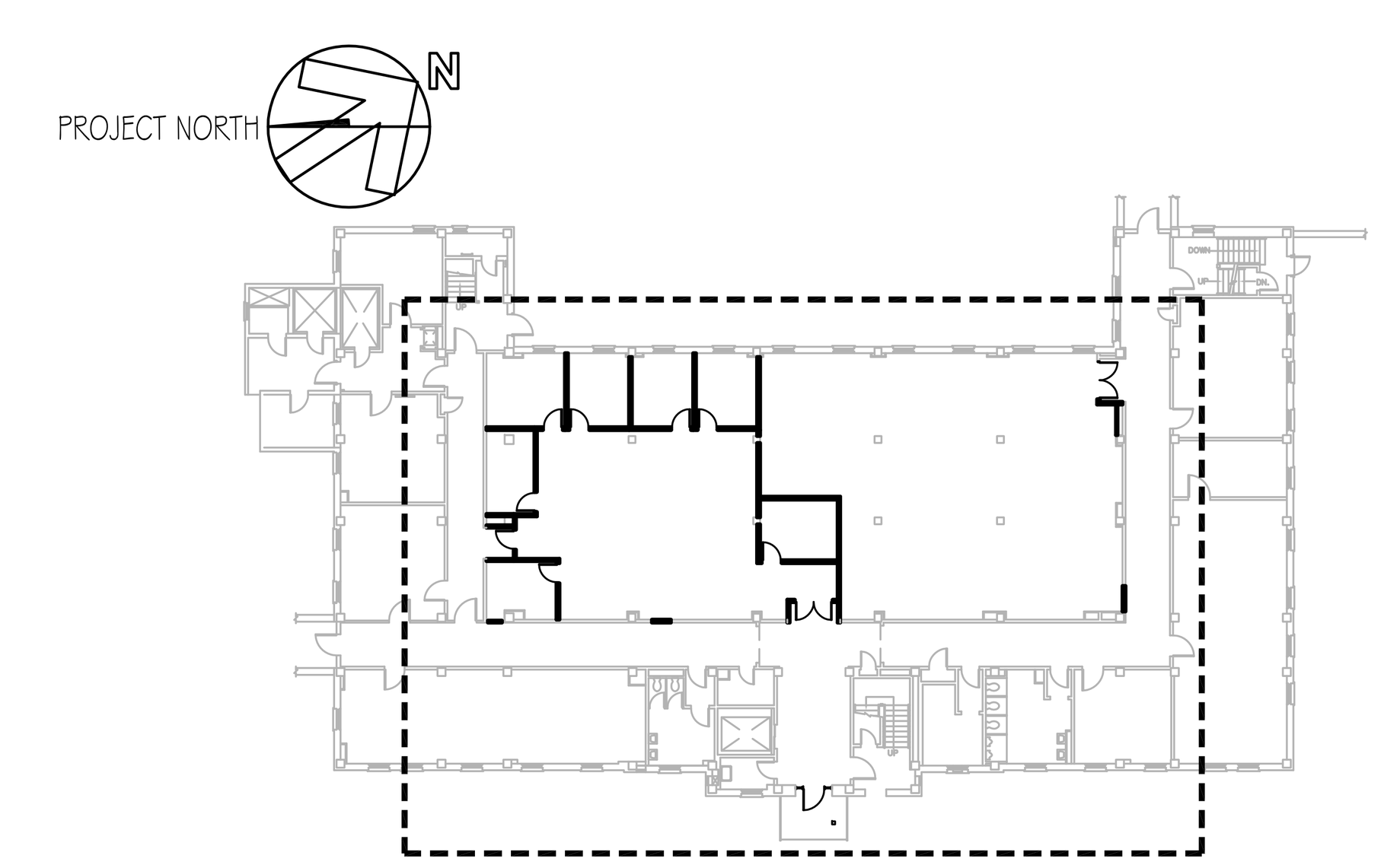

KEY PLAN- BUILDING 22
1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions | Date

CONSULTANTS:
spiezle group

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

ARCHITECT/ENGINEERS:
Miller-Remick LLC
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1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title	ICRA AND PHASING PLANS ARCHITECTURAL
Approved: Project Director	
Project Title	IMPROVE EMERGENCY CACHE - -
Location	VA MED. CENTER, LEBANON, PA
Date	04/10/2013
Checked	SLM
Drawn	KAS
Project Number	595-11-127
Building Number	19 and 22
Drawing Number	CP–003

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES:

1. ALL CODES HAVING JURISDICTION SHALL BE OBSERVED STRICTLY IN THE CONSTRUCTION OF THE PROJECT, INCLUDING ALL APPLICABLE STATE, CITY, AND COUNTY BUILDING, ZONING, ELECTRICAL, MECHANICAL, PLUMBING AND FIRE CODES. THE CONTRACTOR SHALL VERIFY ALL CODE REQUIREMENTS BEFORE COMMENCEMENT OF CONSTRUCTION AND BRING ANY DISCREPANCIES BETWEEN CODE REQUIREMENTS AND THE CONSTRUCTION DOCUMENTS TO THE ATTENTION OF THE ARCHITECT.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF THE WORK. DO NOT SCALE DRAWINGS. IF A DIMENSION IS UNCLEAR OR A DISCREPANCY IS FOUND, NOTIFY THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
3. DETAILS AND SECTIONS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION. MODIFICATIONS MAY BE REQUIRED BY THE CONTRACTOR TO ACCOMMODATE FOR MINOR VARIATIONS.
4. ALL OUTSIDE CMU CORNERS, ON THE INTERIOR OF THE BUILDING SHALL BE BULLNOSED, UNLESS OTHERWISE NOTED.
5. THE GENERAL CONTRACTOR SHALL CONSTRUCT CHASES AND RECESSES AS SHOWN, AND AS REQUIRED, TO CONCEAL THE WORK OF OTHER TRADES AS DIRECTED BY THE ARCHITECT TO MATCH ADJACENT MATERIALS.
6. PROVIDE CORNER BLOCKS AT ALL MASONRY CORNERS INCLUDING SPECIAL ANGLED CMU AND OTHER AVAILABLE SPECIALTY SHAPES.
7. ALL INTERIOR METAL STUDS WITH GYPSUM WALL BOARD ARE DIMENSIONED TO THE FACE OF THE WALLBOARD. ALL MASONRY DIMENSIONS ARE TO THE NOMINAL FACE OF THE WALL. ALL EXTERIOR DIMENSIONS ARE TO FACE OF MASONRY, UNLESS OTHERWISE NOTED. CLEAR DIMENSIONS SHALL BE TAKEN FROM THE FINISHED FACE OF WALLS.
8. CARRY ALL INTERIOR MASONRY WALLS TO THE UNDERSIDE OF DECKING, UNLESS OTHERWISE NOTED.
9. REFER TO THE FIRE RESISTANCE DIRECTORY (LATEST EDITION) BY UNDERWRITERS LABORATORIES FOR CHARACTERISTICS OF ALL SPECIFIED FIRE RATED ASSEMBLIES.

ABBREVIATIONS:

CJ	CONTROL JOINT
CMU	CONCRETE MASONRY UNIT
DN	DOWN
DWG	DRAWING
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EL	ELEVATION
EQ	EQUAL
EJ	EXPANSION JOINT
EWC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER (BRACKET MOUNTED)
FEC	FIRE EXTINGUISHER CABINET
FT	FOOT or FEET
FRTW	FIRE RETARDANT TREATED WOOD
GALV	GALVANIZED
GSF	GROSS SQUARE FEET
GWB	GYPSUM WALL BOARD
HM	HOLLOW METAL
HP	HIGH POINT
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
MO	MASONRY OPENING
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NSF	NET SQUARE FEET
OC	ON CENTER
OD	OVERFLOW DRAIN OR OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PTD	PAINT or PAINTED
PTW	PRESSURE TREATED WOOD
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
REINF	REINFORED OR REINFORCING
RWC	RAIN WATER CONDUCTOR
SF	SQUARE FEET
TOS	TOP OF STEEL
TYP	TYPICAL
VIF	VERIFY IN FIELD

MATERIAL SYMBOLS:

- EARTH
- POROUS FILL or SUB-SLAB AGGREGATE
- CONCRETE
- CONCRETE MASONRY UNIT (CMU)
- BRICK
- GYPSUM WALL/CEILING BOARD
- BATT INSULATION / SOUND ATTENUATION
- RIGID INSULATION
- STEEL / METAL
- CONTINUOUS WOOD BLOCKING (FRTW)
- WOOD SHIM OR BLOCKING (FRTW)
- PLYWOOD

DRAWING SYMBOLS:

DETAIL IDENTIFICATION — DETAIL NUMBER; DRAWING NUMBER

WALL SECTION/ BUILDING SECTION — SECTION NUMBER; DRAWING NUMBER

ELEVATION MARKS — ELEVATION NUMBER; DETAIL NUMBER; SHEET NUMBER

COLUMN NUMBER

DOOR NUMBER

ROOM IDENTIFICATION (NAME, 001, - Gross SF, - Net SF)

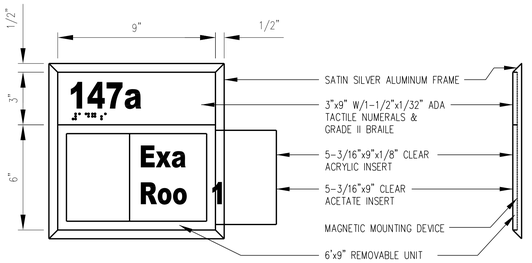
WINDOW TYPE

REVISION or ISSUE NUMBER

PARTITION TYPE

DATUM or ELEVATION MARK

CENTERLINE



COLOR: GANNETT OFF WHITE BACKGROUND (OR EQUIVALENT) W/BLACK COPY

1A SIGNAGE DETAIL- TYPE A
NTS

COLOR: GANNETT OFF WHITE BACKGROUND (OR EQUIVALENT) W/BLACK COPY

1B SIGNAGE DETAIL- TYPE B
NTS

INTERIOR SIGNAGE LOCATION NOTES:

1. ALL WALL MOUNTED SIGNAGE TO BE MOUNTED AT 48" MIN. AND 60" MAX. ABOVE THE ADJACENT FLOOR OR GROUND SURFACE MEASURED FROM THE BASELINE OF THE CHARACTERS AND IN COMPLIANCE WITH ICC/ANSI A117.1-1998 REQUIREMENTS.
2. MOUNTING LOCATIONS SHOWN HERE ARE GENERAL CONDITIONS. SPECIAL CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR MOUNTING LOCATIONS.
3. SIGNAGE SHOWN HERE MAY NOT REPRESENT ALL TYPES REQUIRED FOR THIS PROJECT. REFER TO DRAWINGS AND SPECIFICATION SECTION 10 44 16 - SIGNAGE FOR ADDITIONAL SIGN REQUIREMENTS NOT SHOWN HERE.

2 SIGNAGE LOCATION DETAIL
3" = 1'-0"

SIGNAGE SCHEDULE- BUILDING 19

ROOM NAME	ROOM NO.	QUANTITY	SIGN TYPE
CLEAN SUPPLY STORAGE	SR501	2	B
STERILE STORAGE ROOM	SR502	2	B
MECHANICAL ROOM	TBD	1	A

SIGNAGE SCHEDULE- BUILDING 22

ROOM NAME	ROOM NO.	QUANTITY	SIGN TYPE
BULK STORAGE AREA	SR503	1	A
OPEN OFFICE	OFA06	2	A
OFFICE	OFA01	1	A
OFFICE	OFA02	1	A
OFFICE	OFA03	1	A
OFFICE	OFA04	1	A
OFFICE	OFA05	1	A
OFFICE	OFA07	1	A
OFFICE	OFA08	1	A

* ALL ROOM NUMBERS AND TEXT TO BE FINALIZED BY OWNER DURING CONSTRUCTION

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

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Architecture Planning Design
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Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE: _____

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
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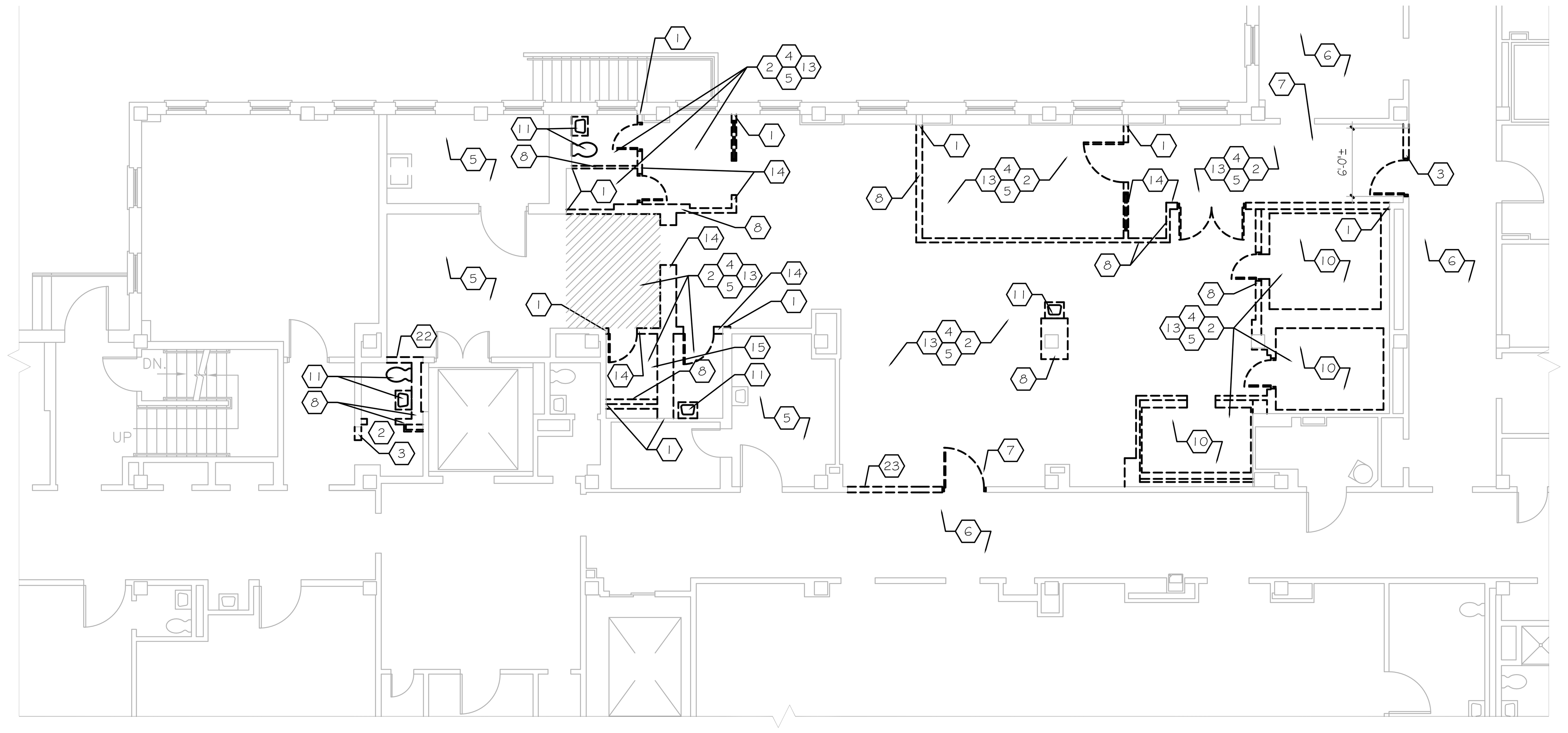
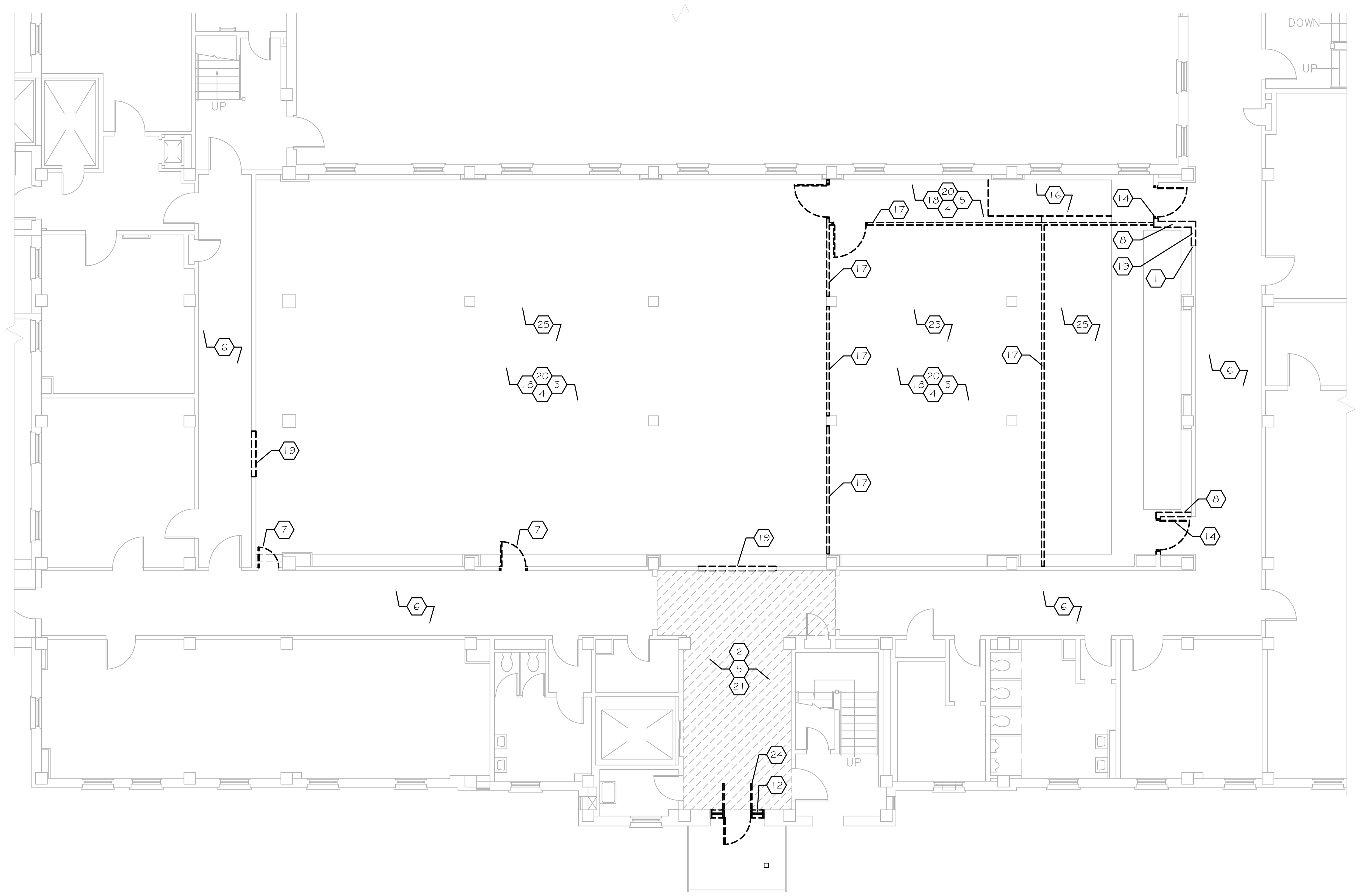
Drawing Title	GENERAL NOTES ARCHITECTURAL
Approved: Project Director	
Project Title	IMPROVE EMERGENCY CACHE - -
Location	VA MED. CENTER, LEBANON, PA
Date	04/10/2013
Checked	SLM
Drawn	KAS
Project Number	595-11-127
Building Number	19 and 22
Drawing Number	A-100
Dwg.	05 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



① BUILDING 19- FIRST FLOOR DEMOLITION PLAN
1/8" = 1'-0"



② BUILDING 22- FIRST FLOOR DEMOLITION PLAN
1/8" = 1'-0"

SPECIFIC DEMOLITION NOTES:

1. PREP AND PATCH EXISTING WALLS TO RECEIVE NEW FINISHES.
2. REMOVE EXISTING FLOOR FINISHES AND ANY EXISTING SUBFLOOR IN THEIR ENTIRETY. CONTRACTOR SHALL SHOT BLAST FLOORS FOR NEW RESIN FLOORING INSTALLATION. PROVIDE LEVELING COMPOUNDS IF REQUIRED FOR PROPER INSTALLATION AND SMOOTHNESS OF NEW FLOORING.
3. REMOVE EXISTING DOOR AND FRAME IN ITS ENTIRETY. ENLARGE ROUGH OPENING TO ACCOMMODATE NEW DOOR AND FRAME. RELOCATE ALL SWITCHES, FIXTURES, AND OTHER EQUIPMENT THAT WILL CONFLICT WITH THE EXPANSION OF THE ROUGH OPENING.
4. REMOVE EXISTING LIGHT FIXTURES AND ASSOCIATED MOUNTING HARDWARE IN THEIR ENTIRETY.
5. REMOVE EXISTING ACOUSTICAL TILE CEILING AND ALL ASSOCIATED MOUNTING EQUIPMENT IN ITS ENTIRETY.
6. REMOVE AND REPLACE PORTIONS OF EXISTING CEILINGS SURROUNDING WORK ZONES TO PROVIDE ACCESS TO EXTEND EXISTING WALLS TO DECK FOR REQUIRED RATING.
7. REMOVE EXISTING DOOR AND HARDWARE IN ITS ENTIRETY INCLUDING FRAME AND THRESHOLD. INFILL EXISTING OPENING AND PREP FOR NEW WALL BOARD AND FINISHES. MAINTAIN RATING REQUIRED BY DRAWING CP-001.
8. REMOVE EXISTING PARTITION IN ITS ENTIRETY.
9. PREP EXISTING DOOR AND WINDOW FRAMES TO RECEIVE NEW FINISHES.
10. REMOVE EXISTING WALK-IN FREEZER IN ITS ENTIRETY INCLUDING DOORS, WALLS, CEILINGS, AND RELATED MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT.
11. REMOVE EXISTING PLUMBING FIXTURE IN ITS ENTIRETY. REMOVE AND/OR CAP ALL ASSOCIATED PIPING.
12. REMOVE EXISTING DOOR AND FRAME IN ITS ENTIRETY. PREPARE ROUGH OPENING FOR INSTALLATION OF NEW DOOR AND FRAME WITH ASSOCIATED HARDWARE.
13. REMOVE EXISTING GLAZED TILE COVE BASE AND PREPARE SURFACE TO RECEIVE NEW WALL BOARD AND FINISHES.
14. REMOVE EXISTING PARTITION, DOOR, AND FRAME.
15. REMOVE EXISTING BUILT IN SHELVING UNIT.
16. REMOVE EXISTING METAL RAMP IN ITS ENTIRETY.
17. REMOVE EXISTING WOOD STUD WALL IN ITS ENTIRETY INCLUDING WIRE MESH PANELS AND DOORS.
18. REMOVE EXISTING PLYWOOD SUBFLOOR AND WOOD SUPPORT SYSTEM.
19. PROVIDE OPENING IN EXISTING WALL FOR INSTALLATION OF DOOR AND FRAME.
20. REMOVE ALL EXISTING FLOOR FINISHES DOWN TO THE CONCRETE SLAB. CONTRACTOR SHALL SHOT BLAST FLOORS FOR NEW FLOORING INSTALLATION.
21. REMOVE EXISTING WALL COVERINGS AND CHAIR RAILS. PREPARE WALLS FOR NEW FINISHES.
22. REMOVE PORTION OF EXISTING WALL. PREPARE AND PATCH OPENING FOR NEW FINISHES .
23. PROVIDE OPENING IN EXISTING WALL FOR INSTALLATION OF DOOR AND FRAME AND SALVAGE GLAZED TILE FOR PATCHING.
24. REMOVE EXISTING DOOR GUARDRAILS.
25. SALVAGE AND PROTECT EXISTING BOWLING ALLEY COMPONENTS AND FLOORING. TURN MATERIALS OVER TO OWNER.

GENERAL DEMOLITION NOTES

A. LOCATIONS AND/OR ELEVATIONS OF EXISTING ITEMS, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE. RESPECTIVE TRADES SHALL FIELD VERIFY ALL LOCATIONS.

B. THE CONTRACTORS SHALL VERIFY ALL CONDITIONS PRIOR TO COMMENCING DEMOLITION. SHOULD QUESTIONS ARISE, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT, IN WRITING, PRIOR TO PROCEEDING WITH DEMOLITION.

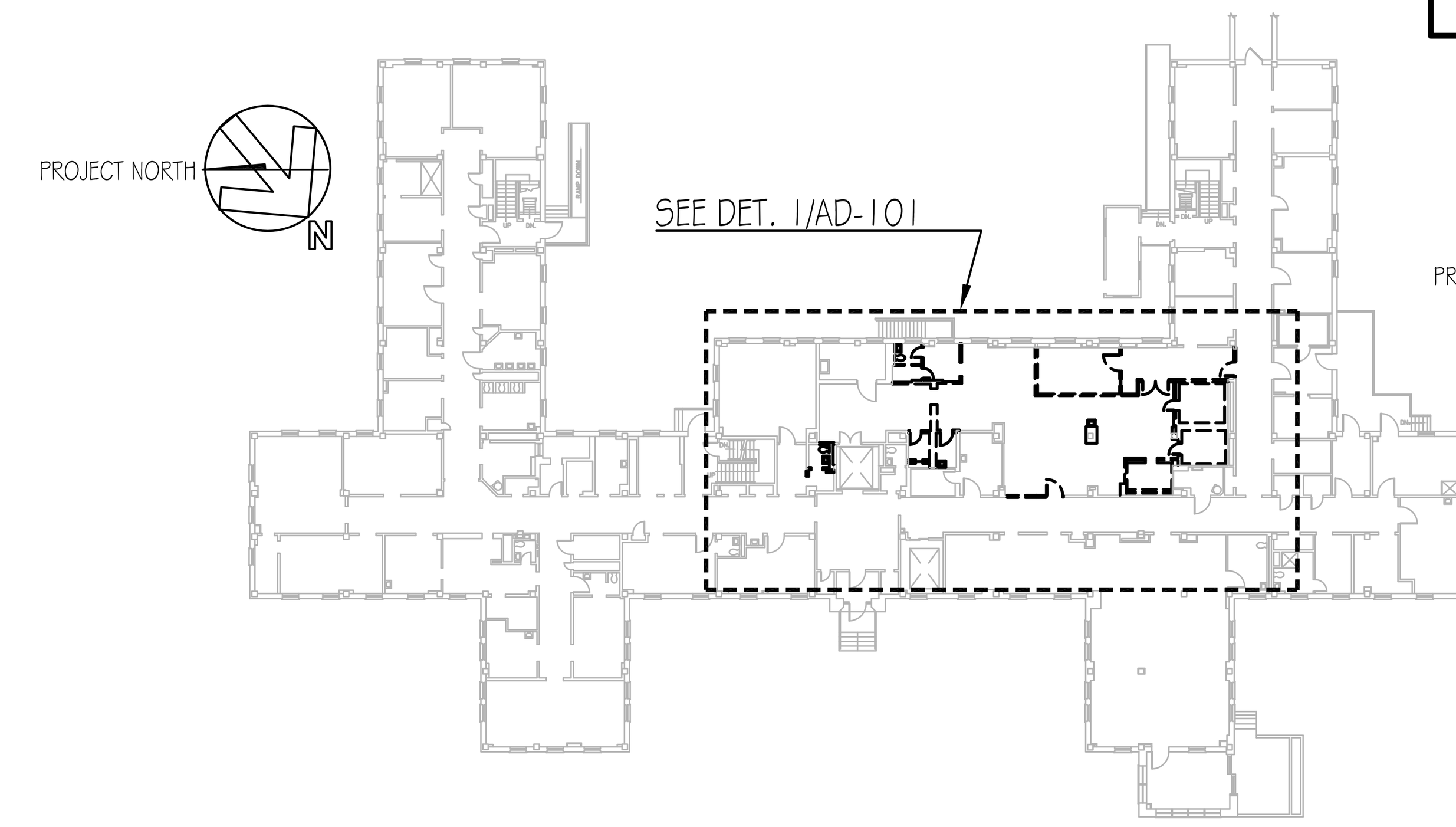
C. CONTRACTORS ARE RESPONSIBLE FOR SHORING, BRACING, AND UNDERPINNING RELATED TO THE DEMOLITION, REMOVAL, OR CUTTING OF ANY WALL, PARTITION, OR ANY OTHER STRUCTURAL ELEMENT.

D. CONTRACTOR TO PREPARE AND PATCH ALL EXISTING WALLS TO RECEIVE NEW FINISHES.

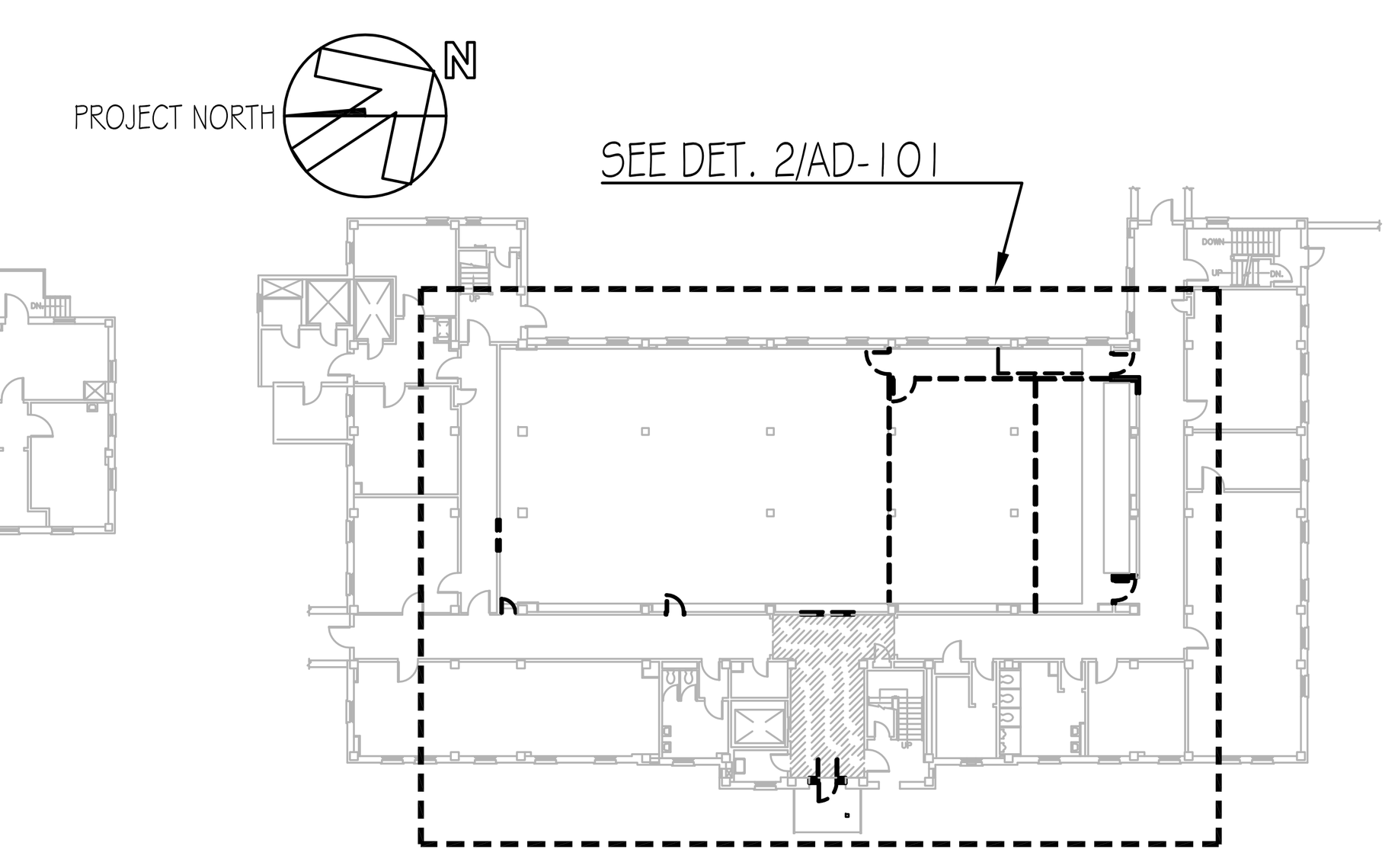
E. SALVAGE AND PROTECT ALL REMOVED GLAZED WALL TILE IN ORDER TO PATCH INFILLED CORRIDOR WALLS.

F. REMOVE PREVIOUSLY AND NEWLY ABANDONED EQUIPMENT ON CEILINGS, WALLS AND COLUMNS, INCLUDING BUT NOT LIMITED TO CONDUIT, JUNCTION BOXES, HANGERS, PIPE, STRAPS, MISCELLANEOUS STEEL, ETC.

G. ANY WORK IN A PHASE INCLUDING BUT NOT LIMITED TO ELECTRICAL, PLUMBING OR HVAC WHICH SUPPORTS WORK IN A LATER PHASE OR SEPARATE LOCATION, SHALL BE MAINTAINED BY APPROVED TEMPORARY CONNECTIONS UNTIL LATER PHASE IS COMPLETE.



KEY PLAN- BUILDING 19
1/32"= 1'-0"



KEY PLAN- BUILDING 22
1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions	Date

CONSULTANTS:

spiezle group

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title: FIRST FLOOR DEMOLITION PLAN ARCHITECTURAL

Approved: Project Director

Project Title: IMPROVE EMERGENCY CACHE
-
-

Location: VA MED. CENTER, LEBANON, PA

Date: 04/10/2013 | Checked: SLM | Drawn: KAS

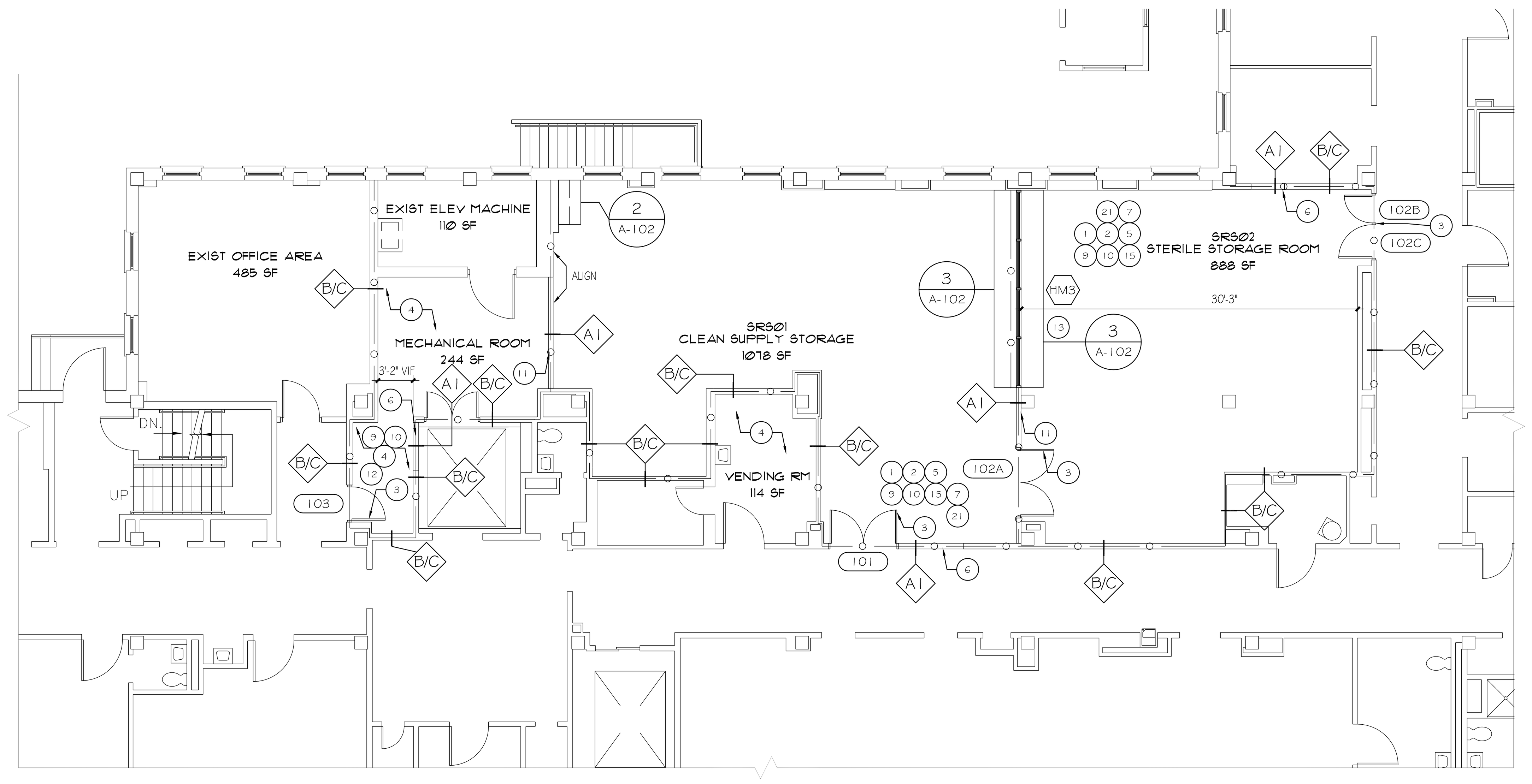
Project Number: 595-11-127

Building Number: 19 and 22

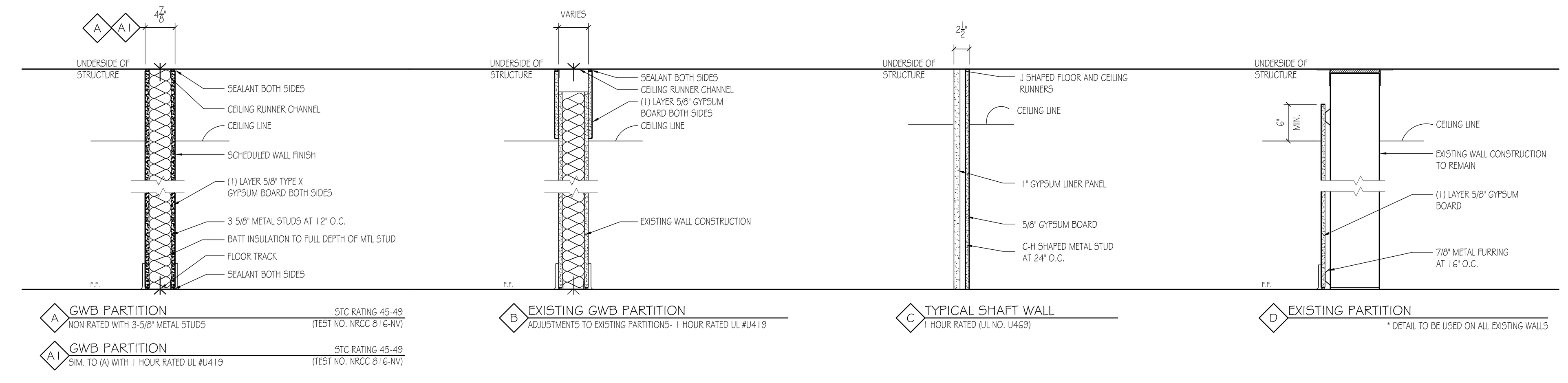
Drawing Number: AD–101

Office of Construction and Facilities Management

Department of Veterans Affairs



1 BUILDING 19- FIRST FLOOR PLAN
1/8" = 1'-0"



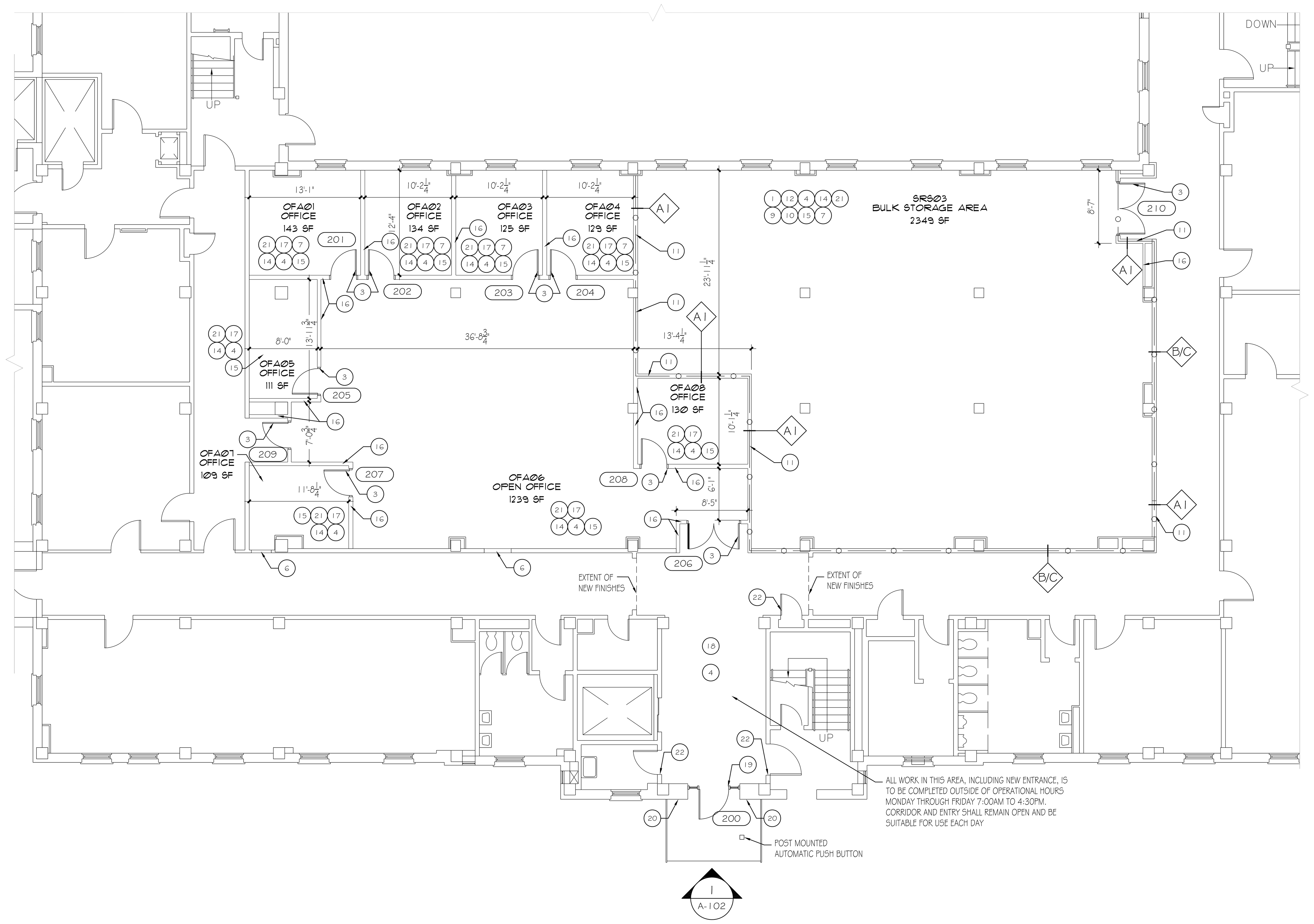
3 PARTITION TYPES
3/4" = 1'-0"

SPECIFIC RENOVATION NOTES:

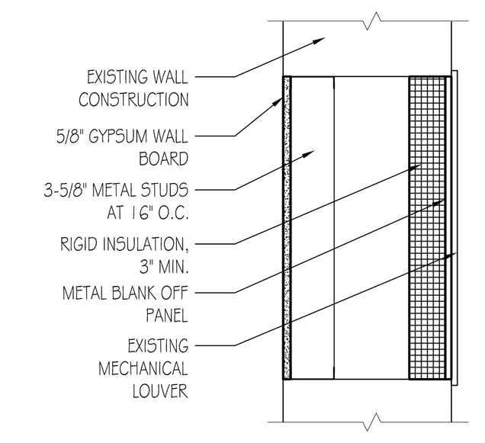
1. APPLY FINISHES TO EXISTING WALLS.
2. PREPARE AND LEVEL SUBFLOOR, PREP WALLS, THEN APPLY EPOXY RESIN FLOORING AND BASE.
3. INSTALL NEW DOOR(S) AND HOLLOW METAL FRAME. SEE DOOR SCHEDULE ON A-102 FOR ADDITIONAL INFORMATION.
4. INSTALL ACOUSTICAL PANEL CEILING.
5. INSTALL WASHABLE ACOUSTICAL TILE CEILING.
6. INFILL EXISTING OPENING WITH NEW GYPSUM WALL BOARD ASSEMBLY AND FINISHES. MATCH EXISTING WALL MATERIAL AND THICKNESS. SEE CP-001 FOR REQUIRED RATING.
7. INSTALL NEW GWB WINDOW POCKETS ALONG WINDOW WALL. SEE RCP FOR ADDITIONAL INFORMATION.
8. APPLY FINISHES TO EXISTING DOOR AND WINDOW FRAMES.
9. EXTEND ALL PERIMETER WALLS UP TO DECK ABOVE FOR RATING SHOWN ON CP-001. SEAL PENETRATIONS IN EXISTING AND EXTENDED WALL WITH RELATED FIRESTOPPING.
10. VERIFY EXISTING RATED CONSTRUCTION EXTENDS TO DECK ABOVE. IF GAPS IN RATED CONSTRUCTION ARE FOUND, FOLLOW NOTE 9. IN EITHER CASE, SEAL ALL PENETRATIONS IN EXISTING AND EXTENDED WALL WITH RATED FIRESTOPPING.
11. PROVIDE NEW RATED PARTITION. SEE CP-001 FOR REQUIRED RATING.
12. PREPARE AND LEVEL SUBFLOOR. INSTALL VCT FLOORING.
13. INSTALL FIRE-RATED GLASS WINDOW
14. INSTALL NEW FLOOR SLAB SYSTEM. REFER TO STRUCTURAL DRAWINGS FOR DETAILS. FINISHED FLOOR HEIGHT TO MATCH FLOOR HEIGHT OF EXISTING CORRIDOR.
15. INSTALL WALL AND CORNER PROTECTION.
16. INSTALL NEW GWB PARTITION.
17. PREPARE AND LEVEL SUBFLOOR. INSTALL CARPET FLOORING.
18. INSTALL NEW WALL COVERINGS, FLOOR AND WALL FINISHES
19. INSTALL NEW ALUMINUM STOREFRONT DOOR AND FRAME. CONNECT NEW DOOR TO EXISTING AUTOMATIC PUSH BUTTONS.
20. CLEAN, PATCH AND TREAT EXISTING CAST STONE ENTRYWAY.
21. FURR OUT ALL EXISTING WALLS WITH $\frac{7}{8}$" HAT CHANNEL AND COVER WITH $\frac{5}{8}$ GYPSUM BOARD PER PARTITION TYPE D.
22. PAINT EXISTING DOOR AND FRAME.

GENERAL RENOVATION NOTES:

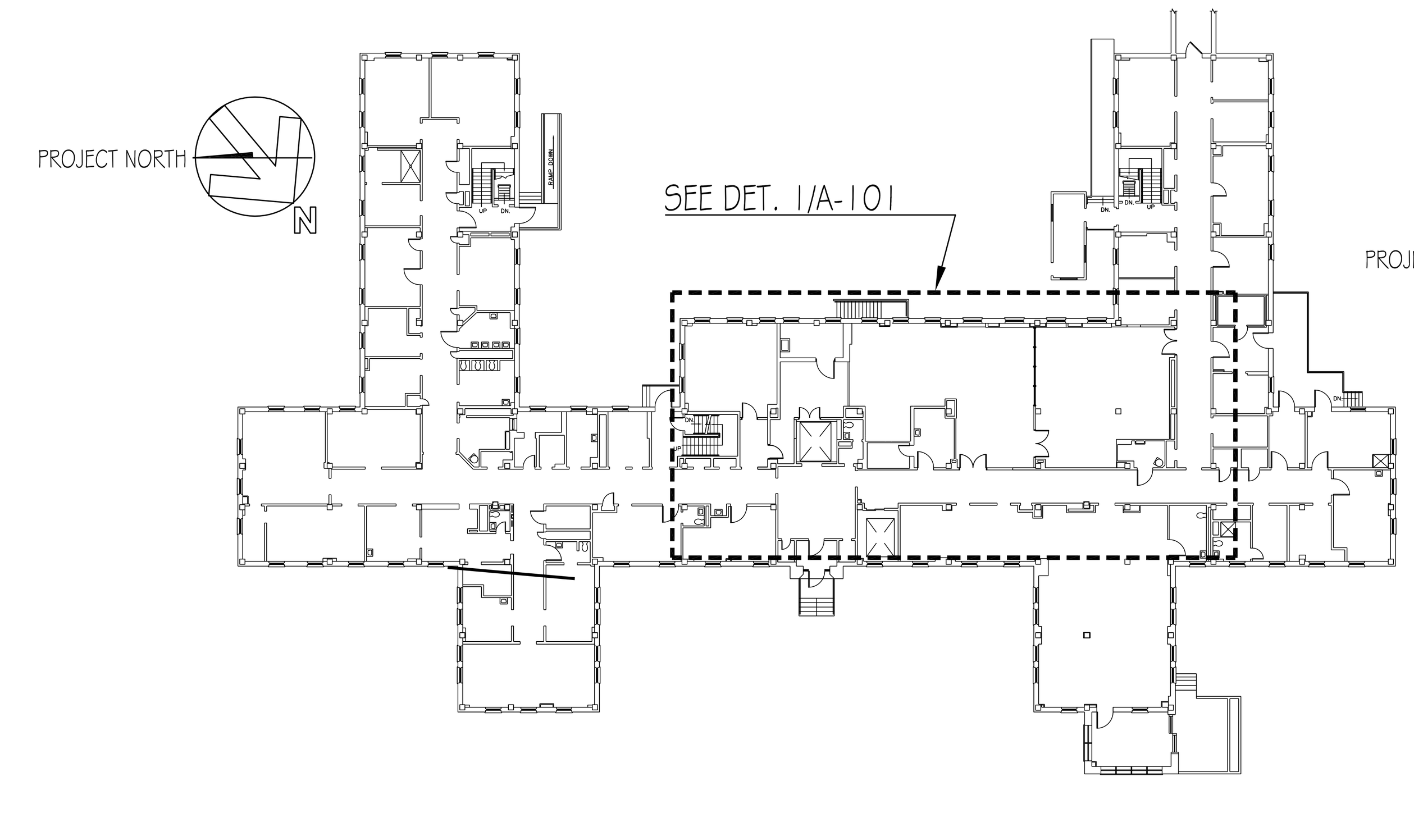
1. ALL FURNITURE, SHELVING, AND PALLET STORAGE BY OWNER, SHOWN FOR REFERENCE ONLY. SHELVING TO ALLOW MINIMUM CLEARANCE OF 18" UNDER CEILINGS (FOR FIRE SUPPRESSION) BUT MAY RUN TO CEILING AT PERIMETER OF ROOMS WHERE NOT INTERFERING WITH SUPPRESSION SYSTEM.
2. ALL PARTITIONS ARE TYPE A UNLESS OTHERWISE NOTED.
3. SEE MEP DRAWINGS FOR COORDINATION WITH ALL MEP SYSTEMS.



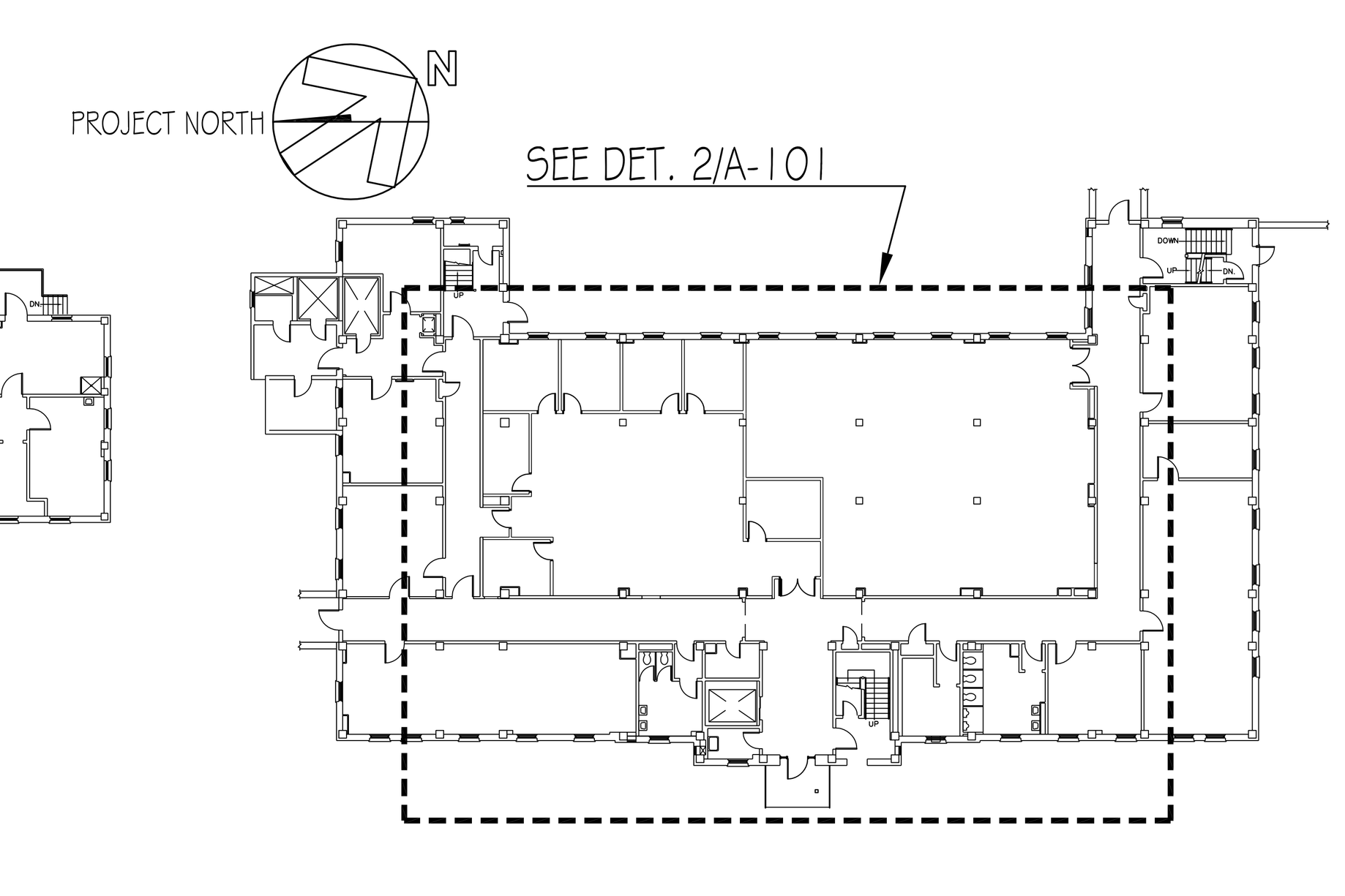
2 BUILDING 22- FIRST FLOOR PLAN
1/8" = 1'-0"



7 LOUVER INFILL DETAIL
3/4" = 1'-0"



KEY PLAN- BUILDING 19
1/32"= 1'-0"



KEY PLAN- BUILDING 22
1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions	Date

CONSULTANTS:

spiezle group

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

ARCHITECT/ENGINEERS:

Miller-Remick LLC
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1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
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PHONE: (856)429-4000
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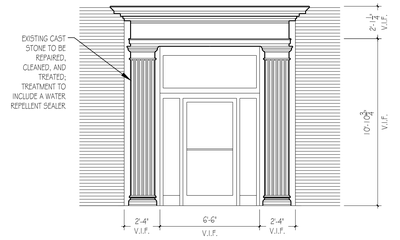
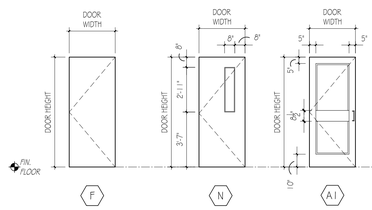
Drawing Title	FIRST FLOOR RENOVATION PLAN ARCHITECTURAL
Approved: Project Director	
Project Title	IMPROVE EMERGENCY CACHE - -
Location	VA MED. CENTER, LEBANON, PA
Date	04/10/2013
Checked	SLM
Drawn	KAS
Project Number	595-11-127
Building Number	19 and 22
Drawing Number	A–101
Dwg.	07 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

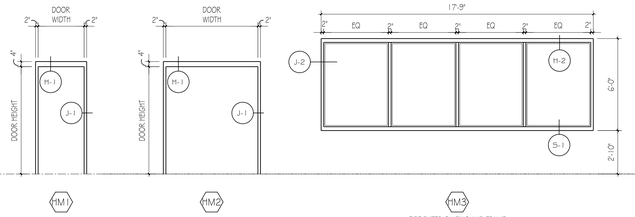
VA FORM 08-6231



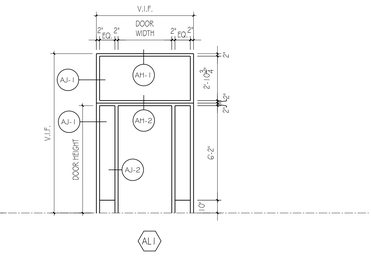
1 ENTRANCE ELEVATION
1/4" = 1'-0"



DOOR TYPES
1/4" = 1'-0"



HOLLOW METAL FRAME TYPES
1/4" = 1'-0"



STOREFRONT FRAME TYPES
1/4" = 1'-0"

DOOR & FRAME SCHEDULE

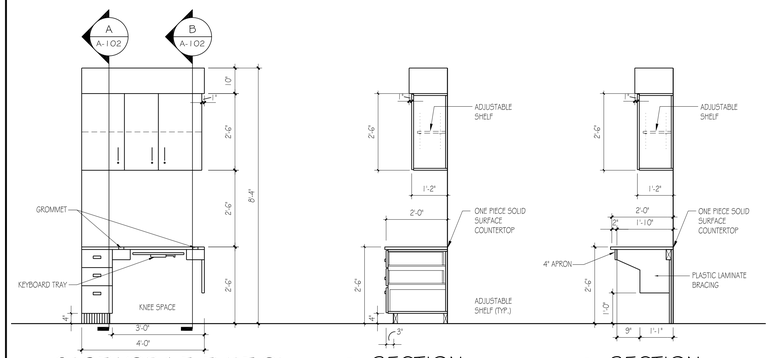
		DOOR					FRAME					HARDWARE			
NO.	LOCATION	WIDTH	HEIGHT	THK.	TYPE	MAT.	TYPE	MAT.	HEAD	JAMB	SILL	SET NO.	STOP	HOURS	REMARKS
101	CLEAN SUPPLY STORAGE	(2) 3'-0"	7'-0"	1-3/4"	F	WD	HM-2	HM	H-1	J-1			WALL	45 MIN.	
102A	STERILE STORAGE ROOM	(2) 3'-0"	7'-0"	1-3/4"	N	WD	HM-2	HM	H-1	J-1			WALL	45 MIN.	
102B	STERILE STORAGE ROOM	2'-6"	7'-0"	1-3/4"	F	WD	HM-2	HM	H-1	J-1			WALL	45 MIN.	
102C	STERILE STORAGE ROOM	3'-0"	7'-0"	1-3/4"	F	WD	HM-2	HM	H-1	J-1			WALL	45 MIN.	
103	MECHANICAL ROOM	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL	45 MIN.	

BUILDING 19- DOOR SCHEDULE
1/8" = 1'-0"

DOOR & FRAME SCHEDULE

		DOOR					FRAME					HARDWARE			
NO.	LOCATION	WIDTH	HEIGHT	THK.	TYPE	MAT.	TYPE	MAT.	HEAD	JAMB	SILL	SET NO.	STOP	HOURS	REMARKS
200	FRONT ENTRANCE DOOR	3'-6"	7'-0"	1-3/4"	A1	AL	AL-1	AL	AH-1	AJ-1	T1		WALL		VERIFY DIMENSIONS IN FIELD
201	OFFICE OFA01	3'-0"	7'0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
202	OFFICE OFA02	3'-0"	7'0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
203	OFFICE OFA03	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
204	OFFICE OFA04	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
205	OFFICE OFA05	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
206	OPEN OFFICE OFA06	(2) 3'-0"	7'-0"	1-3/4"	A1	WD	HM-2	HM	H-1	J-1			WALL		GLAZING TO BE FROSTED
207	OFFICE OFA07	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
208	OFFICE OFA08	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
209	OPEN OFFICE OFA06	3'-0"	7'-0"	1-3/4"	F	WD	HM-1	HM	H-1	J-1			WALL		
210	BULK STORAGE AREA	(2) 3'-0"	7'-0"	1-3/4"	F	WD	HM-2	HM	H-1	J-1			WALL	45 MIN.	

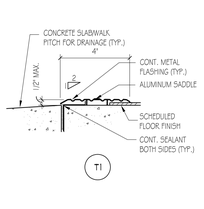
BUILDING 22- DOOR SCHEDULE
1/8" = 1'-0"



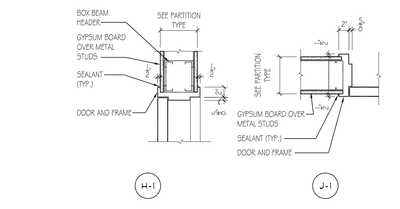
2 CASEWORK ELEVATION
1/2" = 1'-0"

A SECTION
1/2" = 1'-0"

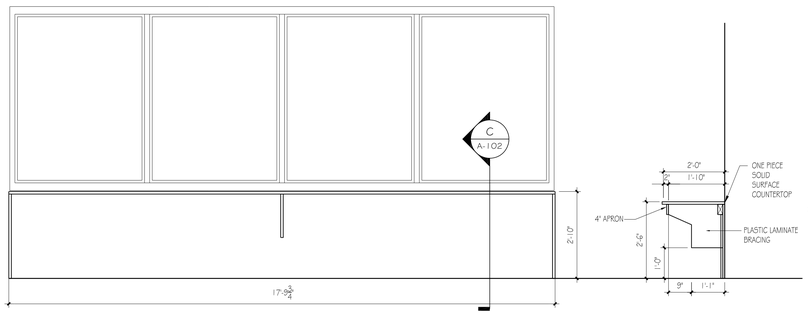
B SECTION
1/2" = 1'-0"



THRESHOLD TYPES
1" = 1'-0"

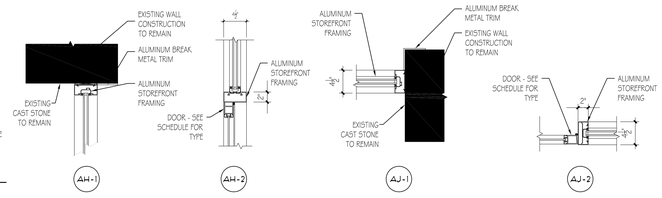


HOLLOW METAL DETAILS
1" = 1'-0"

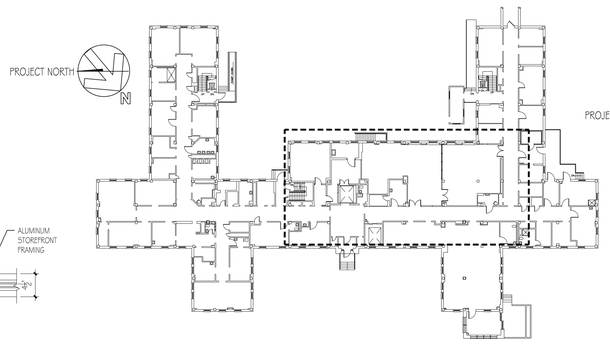


3 CASEWORK ELEVATION
1/2" = 1'-0"

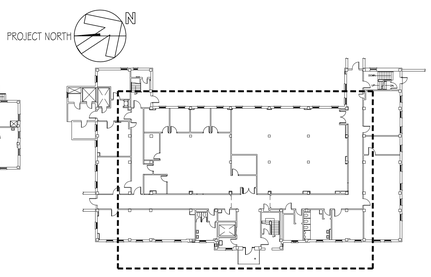
C SECTION
1/2" = 1'-0"



ALUMINUM FRAME DETAILS
1" = 1'-0"



KEY PLAN- BUILDING 19
1/32"= 1'-0"



KEY PLAN- BUILDING 22
1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions	Date

CONSULTANTS:

spiezle group
SPIEZLE ARCHITECTURAL GROUP, INC.
Architecture Planning Design
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Philadelphia, PA 19106
Phone: 215.574.7600
Fax: 215.574.7100

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

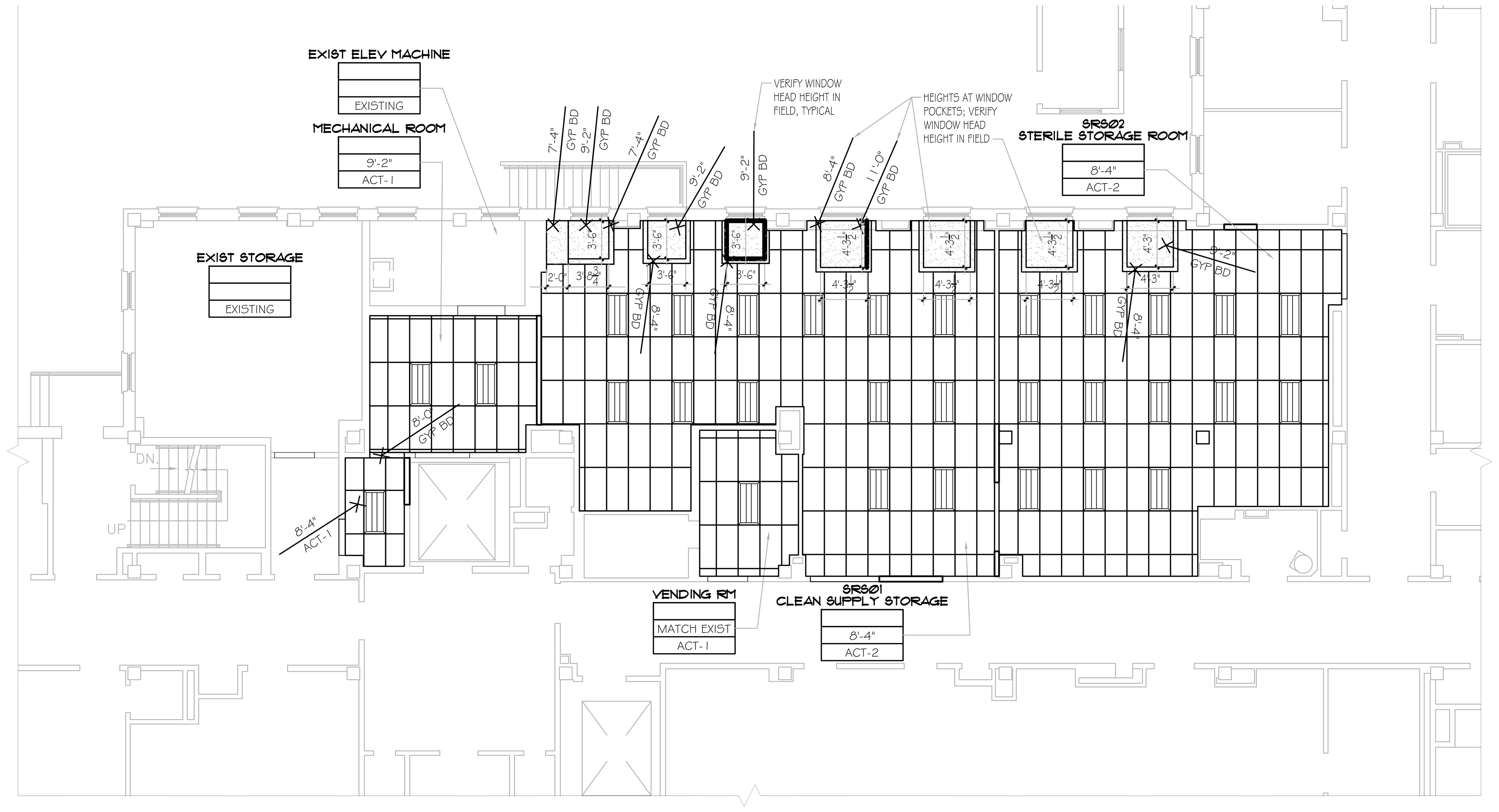
ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

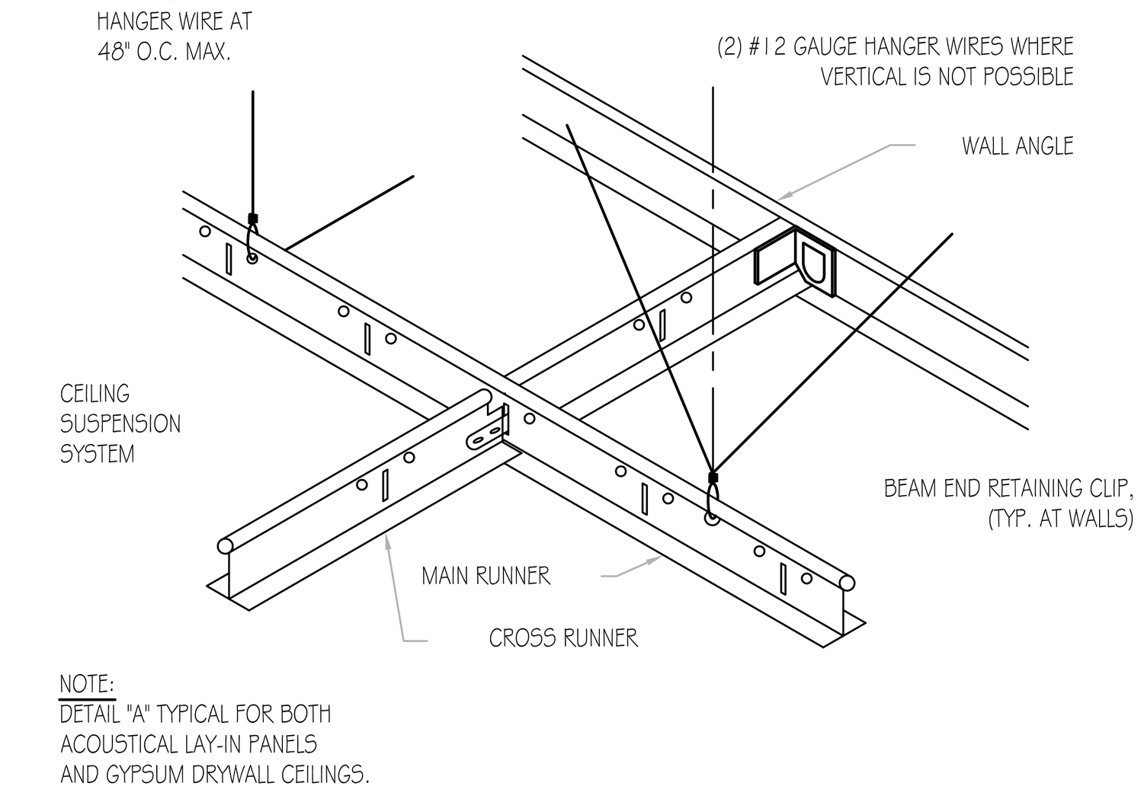
Drawing Title	MISCELLANEOUS DETAILS ARCHITECTURAL
Approved: Project Director	
Project Title	IMPROVE EMERGENCY CACHE - -
Location	VA MED. CENTER, LEBANON, PA
Date	04/10/2013
Checked	SLM
Drawn	KAS
Project Number	595-11-127
Building Number	19 and 22
Drawing Number	A-102
Dwg.	08 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

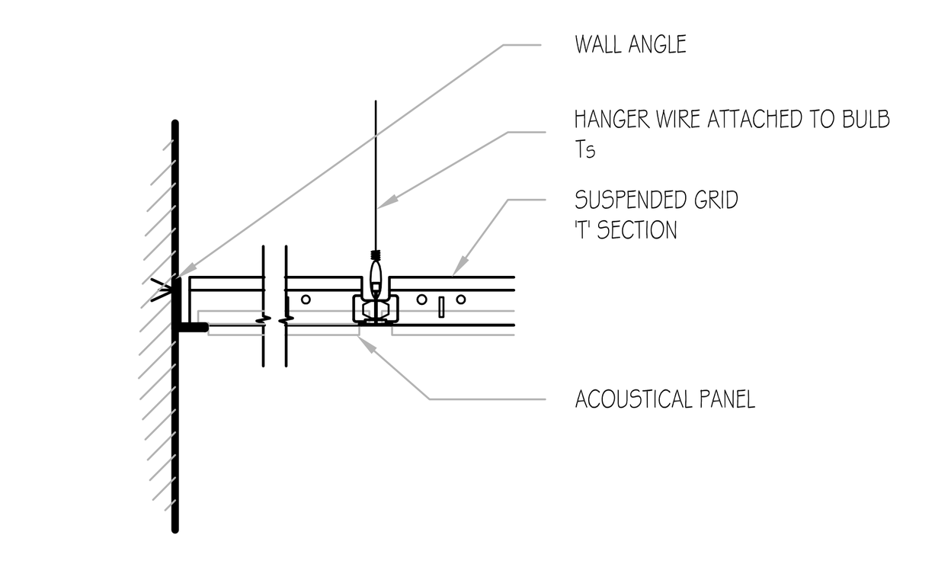
VA FORM 08-6231



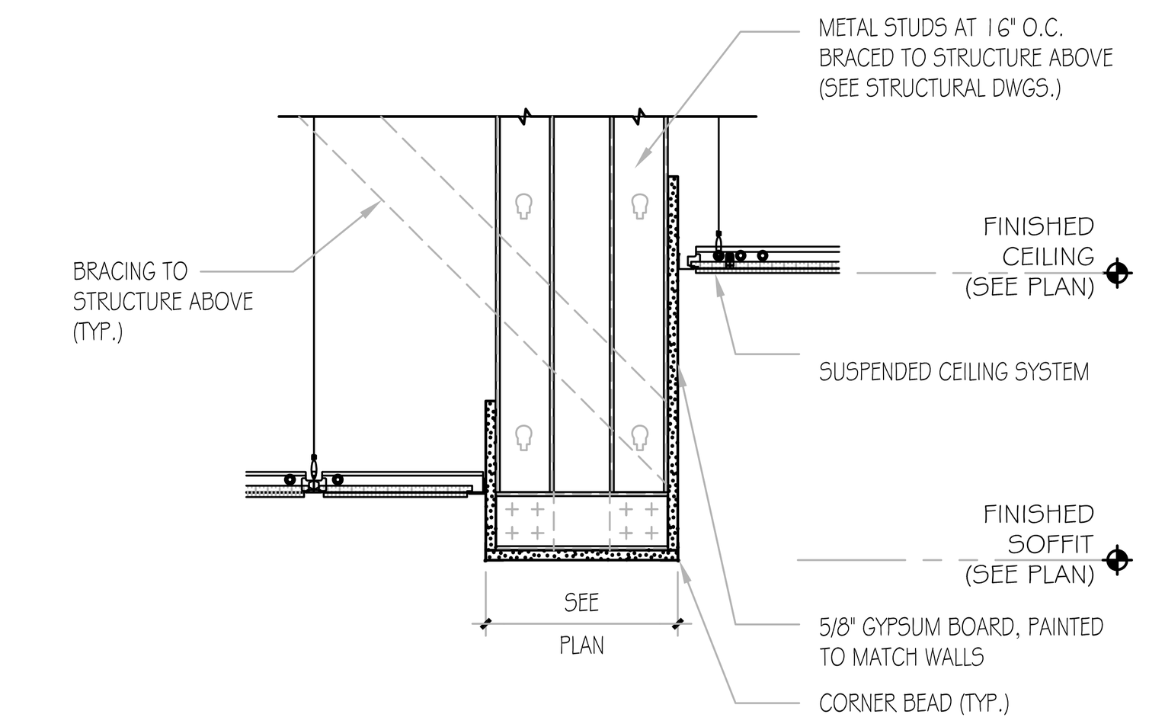
1 BUILDING 19- FIRST FLOOR PLAN
1/8" = 1'-0"



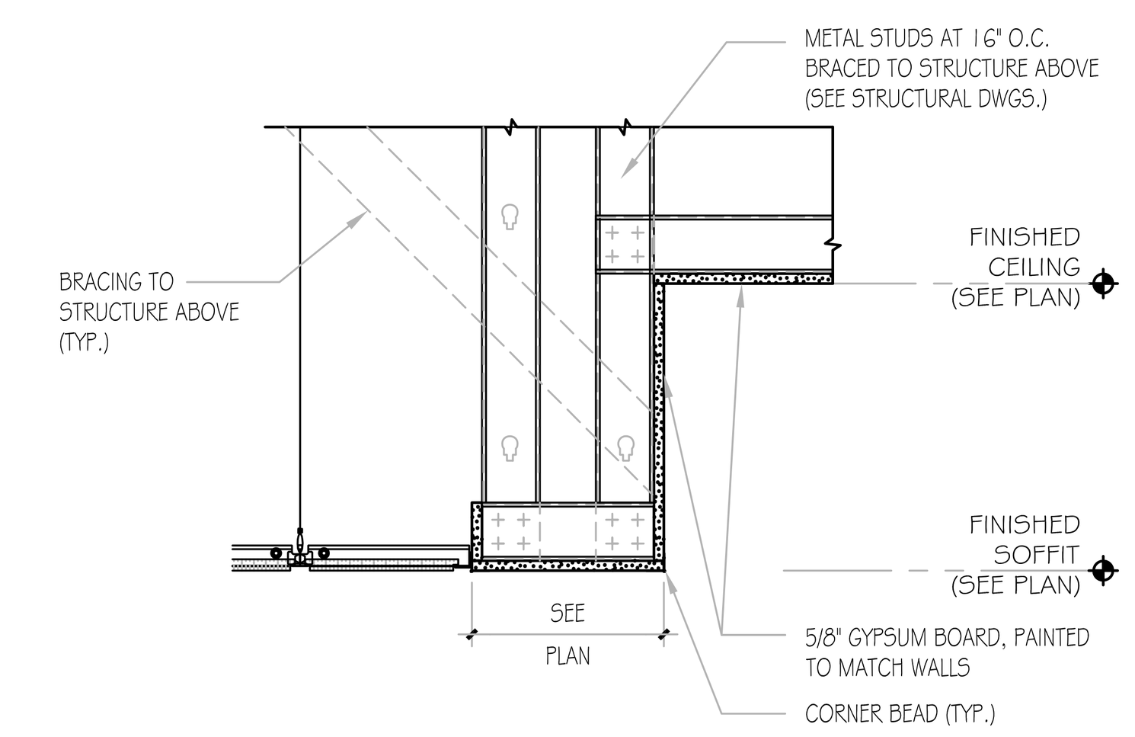
A TYPICAL SUSPENDED CEILING SYSTEM
1" = 1'-0"



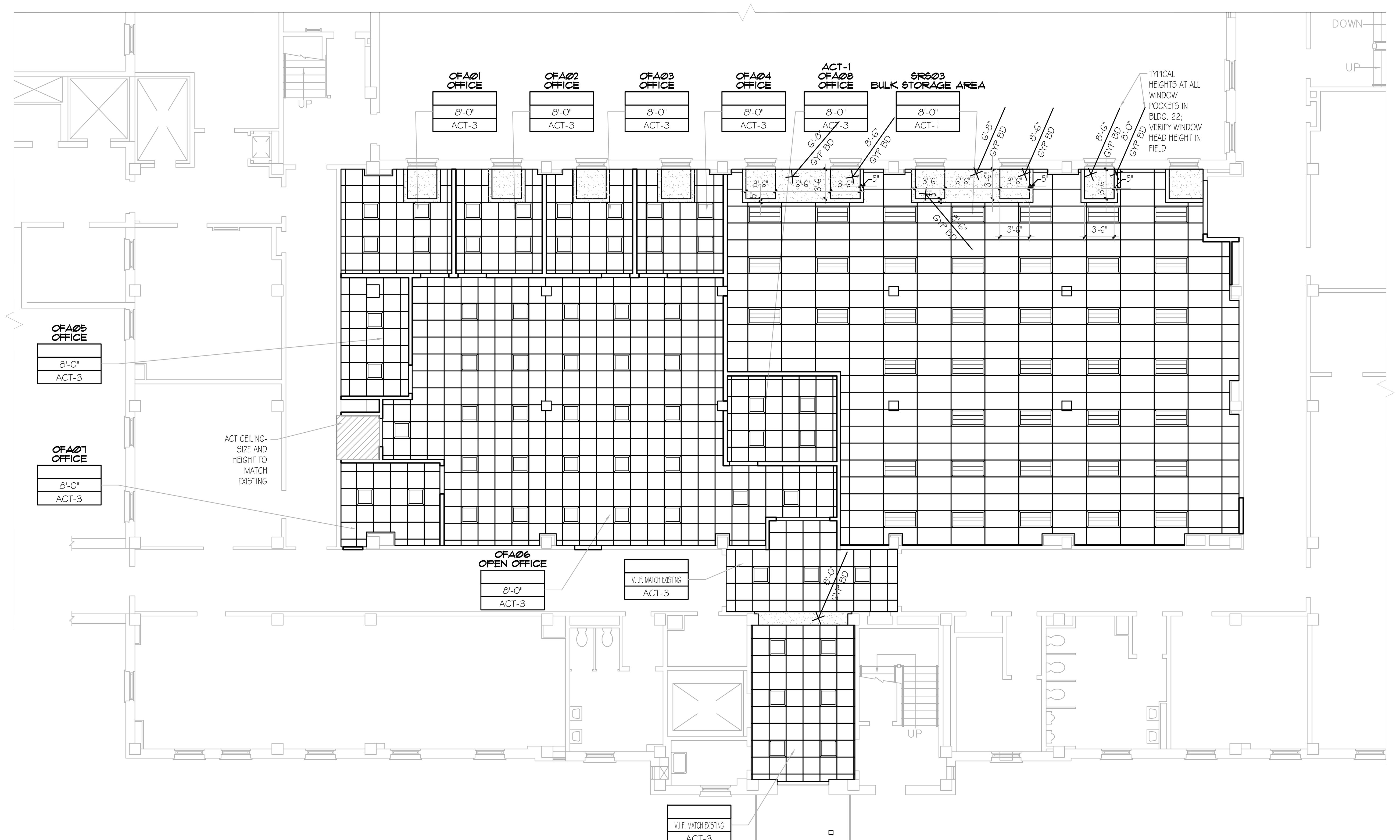
B TYPICAL WALL DETAIL AT SUSPENDED CEILINGS
1" = 1'-0"



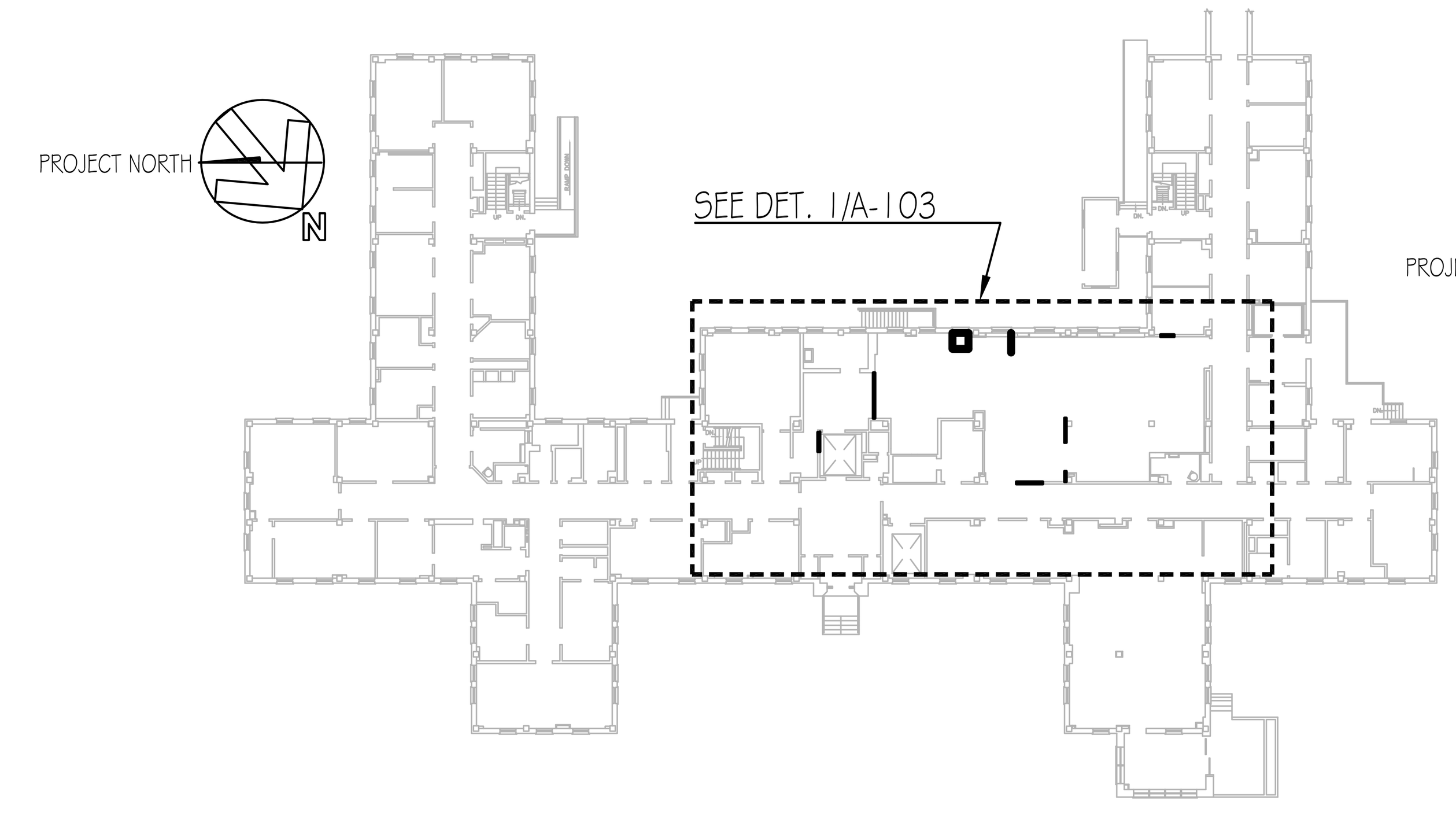
C BULKHEAD DETAIL
1" = 1'-0"



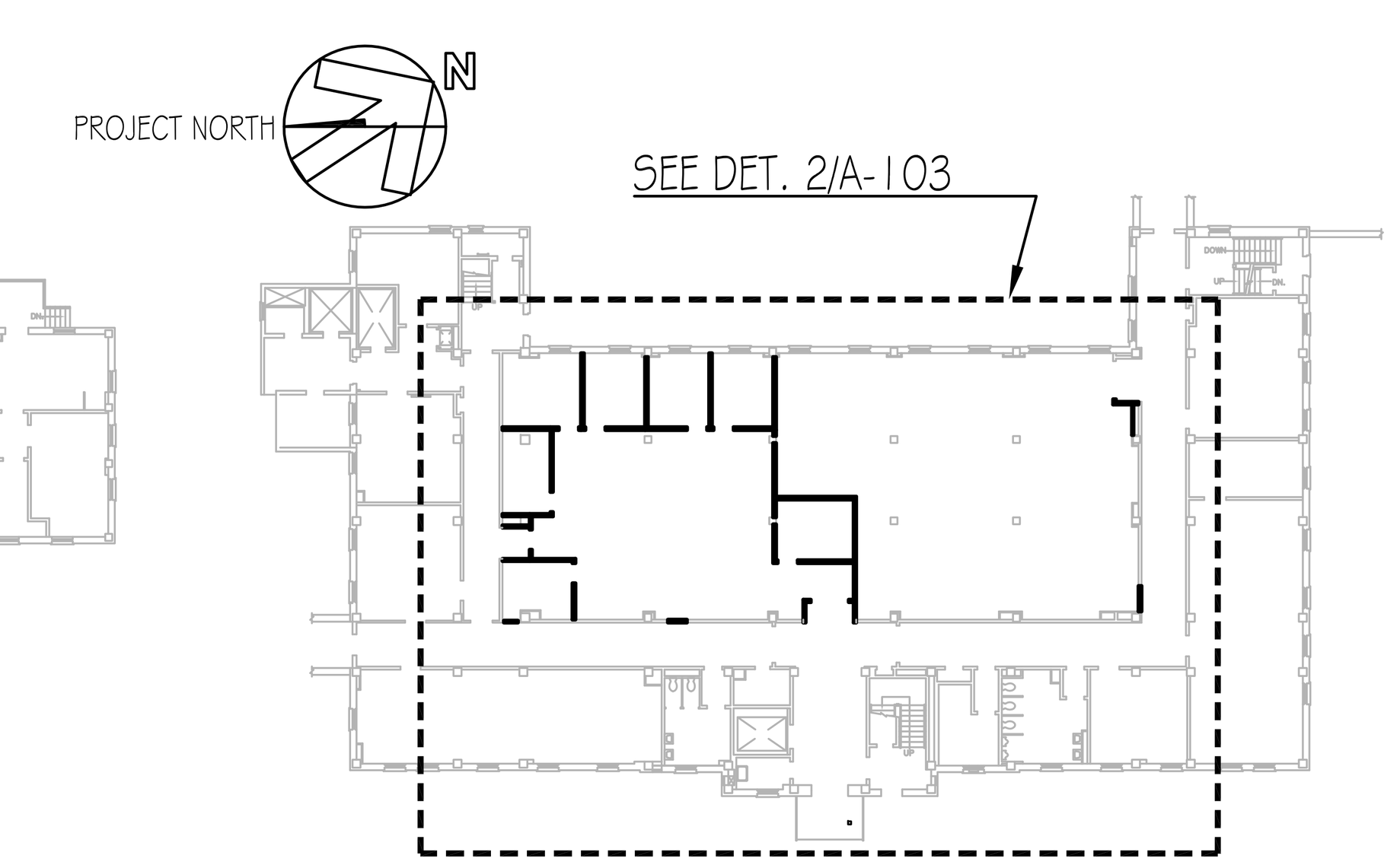
D WINDOW POCKET DETAIL
1" = 1'-0"



2 BUILDING 22- FIRST FLOOR PLAN
1/8" = 1'-0"



KEY PLAN- BUILDING 19
1/32"= 1'-0"



KEY PLAN- BUILDING 22
1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions	Date

CONSULTANTS:

spiezle group
Architecture Planning Design

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE:

ARCHITECT/ENGINEERS:

Miller-Remick LLC
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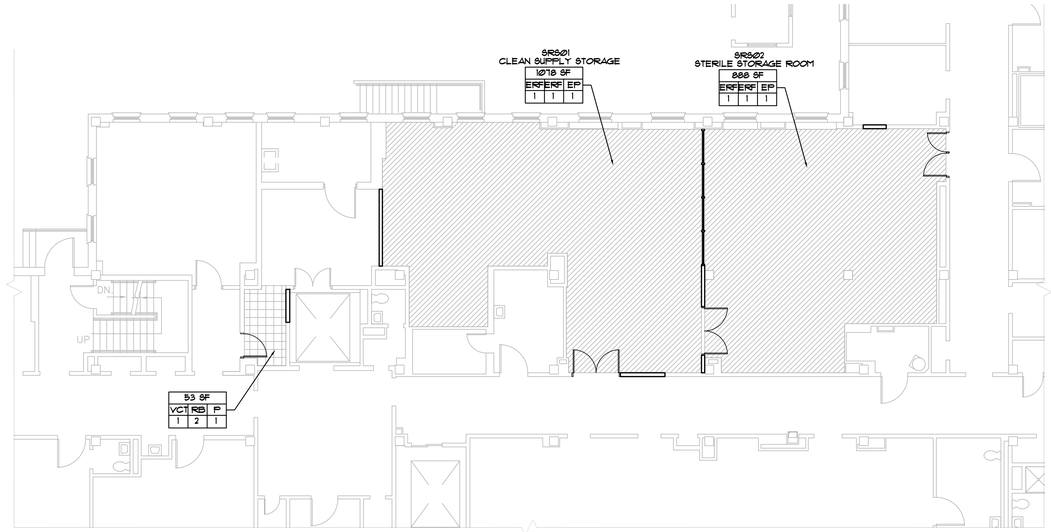
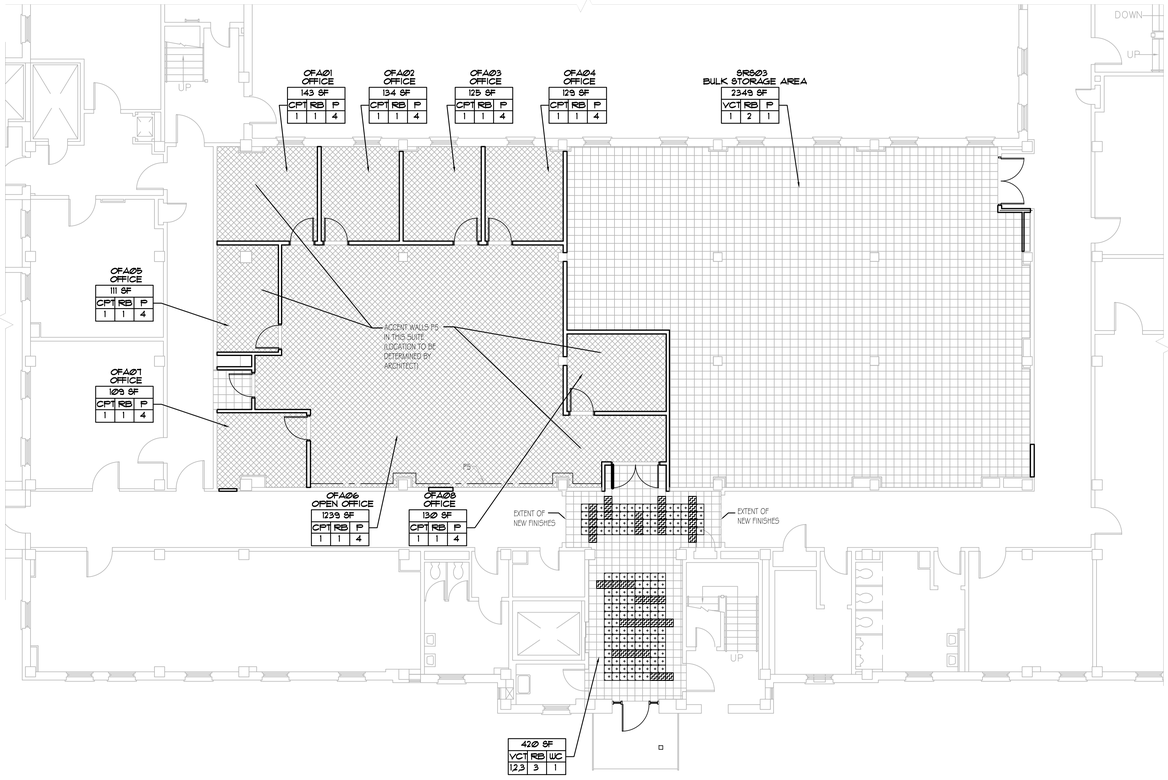
Drawing Title	REFLECTED CEILING PLAN ARCHITECTURAL
Approved: Project Director	
Project Title	IMPROVE EMERGENCY CACHE
Location	VA MED. CENTER, LEBANON, PA
Date	04/10/2013
Checked	SLM
Drawn	KAS
Project Number	595-11-127
Building Number	19 and 22
Drawing Number	A-103
Dwg.	09 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs



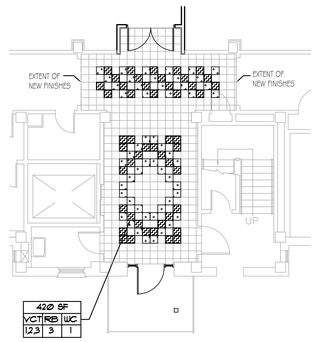
1 BUILDING 19- FIRST FLOOR PLAN

1/8" = 1'-0"



2 BUILDING 22- FIRST FLOOR PLAN

1/8" = 1'-0"



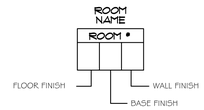
2B BUILDING 22- LOBBY FLOORING OPTION

1/8" = 1'-0"

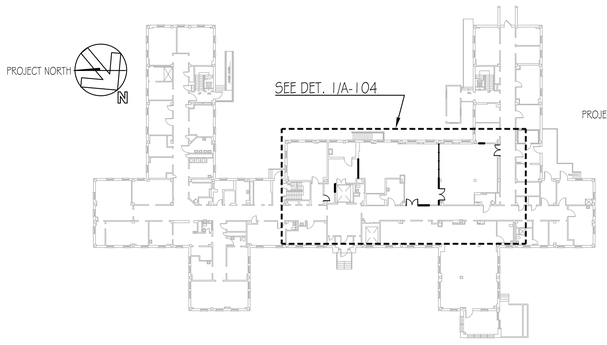
SCHEDULE OF INTERIOR FINISHES					
FINISHES	LEGEND	CODE	MANUFACTURER/STYLE	COLOR	REMARKS
VINYL COMPOSITION TILES		VCT1	MANNINGTON PROGRESSIONS	TO MATCH FIELD COLOR IN LOBBY OF BUILDING 22	12 X 12 INCHES FIELD TILES
		VCT2	MANNINGTON PROGRESSIONS	TO MATCH ACCENT COLOR IN LOBBY OF BUILDING 22	12 X 12 INCHES ACCENT TILES
		VCT3	MANNINGTON PROGRESSIONS	55519 RED ROCK	12 X 12 INCHES ACCENT TILES
RUBBER WALL BASE		RB1	JOHNSONITE	283 TOAST	6 INCHES HIGH BASE
		RB2	JOHNSONITE	63 BURNT UMBER B	6 INCHES HIGH BASE
		RB3	JOHNSONITE	29 MOON ROCK WG	6 INCHES HIGH BASE
EPOXY PAINT		EP	BENJAMIN MOORE- SUPER SPEC HP ACRYLIC EPOXY	WHITE	
CARPET		CPT	SHAW CARPET TILE	GLIMMER TILE- GLOSS COLOR 27761	24 X 24 INCHES TILES
EPOXY RESIN FLOORING		ERF	PALMA EPOXY FLOORING	PALMALITE COBALT COLOR	
WALL COVERING		WC	WOLF GORDON- TWIGS	TWG 7-6904 ASPEN	
PAINT COLORS		P1	BENJAMIN MOORE	SIMPLY WHITE	FIELD COLOR FOR WALLS
		P2	BENJAMIN MOORE	SIMPLY WHITE	DOOR TRIM
		P3	BENJAMIN MOORE	TBD	DOORS AND TRIM IN BUILDING 22 LOBBY
		P4	BENJAMIN MOORE	TAPESTRY BEIGE 975	FIELD COLOR FOR WALLS
		P5	BENJAMIN MOORE	JAMESTOWN BLUE HC-146	ACCENT COLOR
		P6	BENJAMIN MOORE	OCEAN FLOOR 1630	DOOR TRIM IN OFFICE AREA
PLASTIC LAMINATE		PL1	WILSONART	4879-38 STEEL MESH	FIELD COLOR FOR CASEWORK
SOLID SURFACE		SS1	FORMICA SOLID SURFACING	102 ARCTIC	COUNTERTOPS AND WINDOW STOOLS

NOTES: 1. ALL PATCHING DONE TO THE EXISTING FLOORING AND WALL BASE IS TO MATCH EXISTING/ADJACENT.

LEGEND	
CPT	CARPET
ERF	EPOXY RESIN FLOOR/BASE
EP	EPOXY PAINT
EX	EXISTING FINISH TO REMAIN
GWB	GYPSUM WALLBOARD (PAINTED)
P	PAINTED
PL	PLASTIC LAMINATE
RB	RUBBER BASE
SC	SEALED CONCRETE FLOOR
T	CERAMIC OR PORCELAIN TILE
TB	TILE BASE
VCT	VINYL COMPOSITION TILE
WC	WALL COVERING
WD	WOOD FLOORING

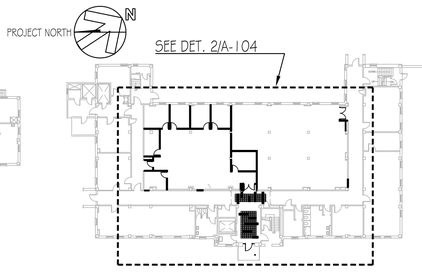


ROOM FINISH LEGEND



KEY PLAN- BUILDING 19

1/32"= 1'-0"



KEY PLAN- BUILDING 22

1/32"= 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Revisions	Date

CONSULTANTS:

spiezle group
SPIEZLE ARCHITECTURAL GROUP, Inc.
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321 Arthur Godfrey Road
Miami Beach, FL 33140
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Fax: 610.874.7100

Mechanical/Electrical/Plumbing/Structure:
A. STEVENS KRUG, AIA, PE, CEM, LEED AP
SPIEZLE GROUP, INC.
SIGNATURE: _____

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE – 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title	FINISH FLOOR PLANS ARCHITECTURAL
Approved: Project Director	
Project Title	IMPROVE EMERGENCY CACHE - -
Location	VA MED. CENTER, LEBANON, PA
Date	04/10/2013
Checked	SLM
Drawn	KAS
Project Number	595-11-127
Building Number	19 and 22
Drawing Number	A-104
Dwg.	10 of 47

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Department of Veterans Affairs

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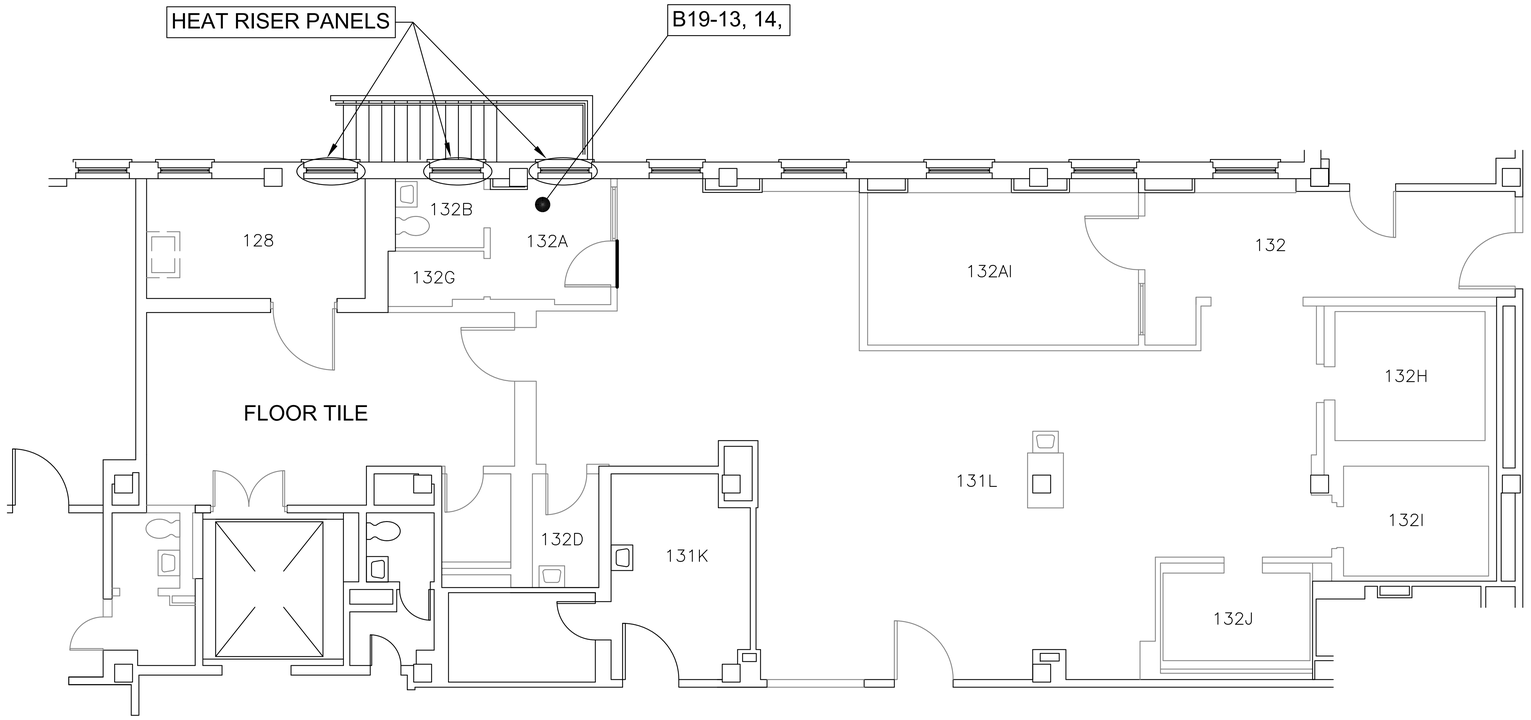

Building 19		
Area	Description	Length/Volume
132A	ACM Floor Tile	64 sf
132A/132B/128	Heat Riser Panels	10 sf (ea.)
UN-NAMED AREA	Additional Floor Tile	900 sf

BUILDING 19

SCALE: 1/4" = 1'

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED
Scale: 1/4"=1'-0"

Revisions	Date
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-	-
-	-
-	-

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business

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BUILDING ONE - 1st FLOOR
CHERRY HILL, NEW JERSEY
08034 PHONE: (856)429-4000
FAX: (856)429-5002

ENVIRONMENTAL CONSULTANT

ENVIRONMENTAL SOLUTIONS GROUP, INC.
A Service Disabled Veteran-Owned Business

4142 OGLETOWN-STANTON ROAD
SUITE 226
NEWARK, DELAWARE 19701-1306

Drawing Title: Areas Having Asbestos Containing Materials
–

Approved: Project Director
–
–
–

Project Title: Improve Emergency Cache
–
VAMC, Lebanon, PA

Location: Lebanon, PA –

Date: April 13, 2013 | Checked: KW | Drawn: CMB

Project Number: 528A5-12-517

Building Number: No. 19

Drawing Number: ACM-101

Dwg. 11 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

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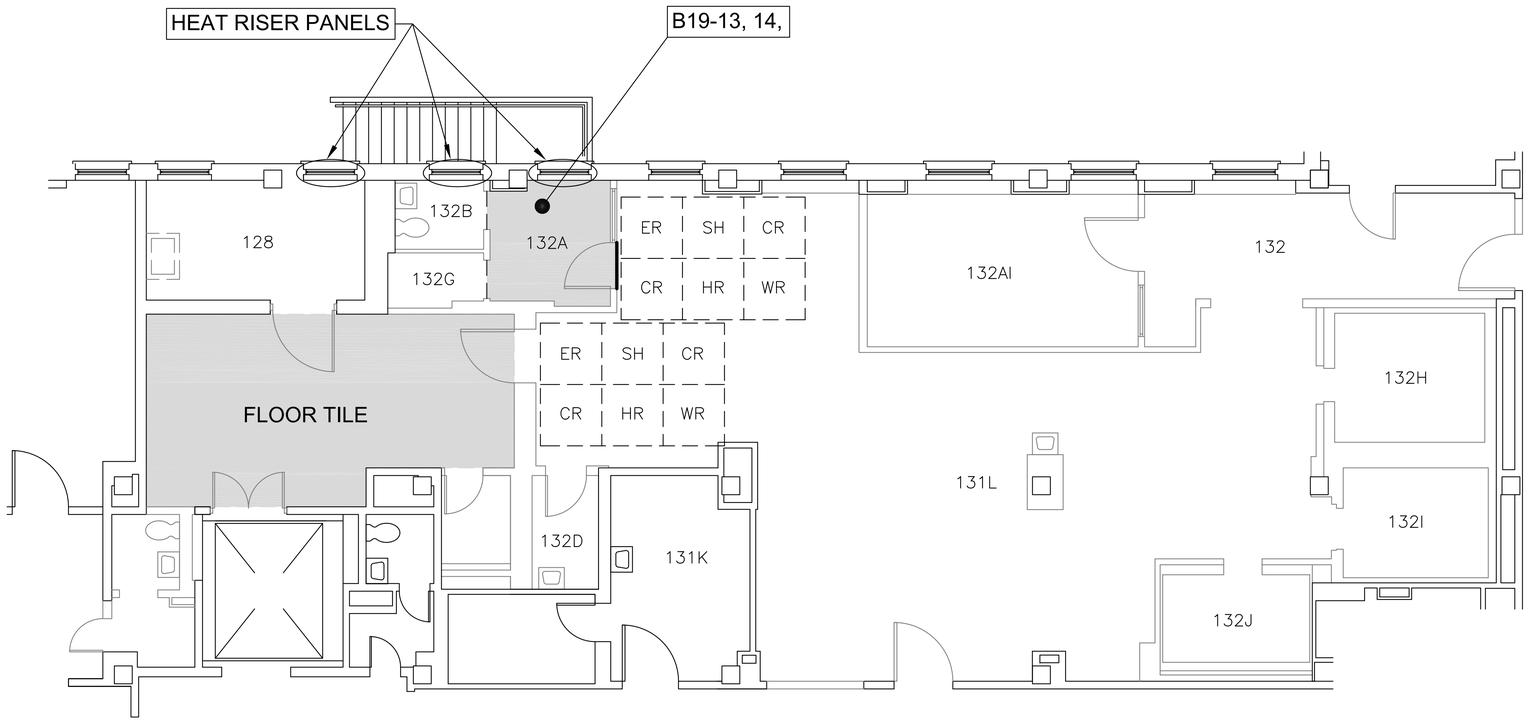

BUILDING 19

SCALE: 1/4" = 1'

Building 19		
Area	Description	Length/Volume
132A	ACM Floor Tile	64 sf
132A/132B/128	Heat Riser Panels	10 sf (ea.)
UN-NAMED AREA	Additional Floor Tile	900 sf

General Notes:

1) Presentation of information is based on best available information. Drawings schematics were provided by Miller-Remick, LLC. Utilized the schematics for purposes of identifying rooms that contain Asbestos Containing Materials.
2) Project #595-11-127 involves abatement of ACM floor tile.
ER - Equipment Room
SH - Shower
CR - Personnel Decon
WR - Wash Room
HR - Holding Room

Specific Notes:

1) Abatement Contractor is responsible for providing asbestos air monitoring through a sub-contract with an industrial Hygiene Firm as described on page 5 of specifications.
2) Rooms 132A, 132B and 132G should be abated as one area and room 128 and the un-named area should be abated as the second area.

Scope Specific Notes:

1. Gross removal of asbestos floor tile using approved method. Any use of power tool tile removal equipment must be approved by VPIH.
2. Personnel can utilize three stage decons when performing work in mini enclosures.
3. Utilize existing electric; Provide GFCI protection.
4. Water sources for work areas are available in the bathrooms and Janitor's closets.
5. Exhaust through operable windows to the Exterior.

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

Scale: 1/4"=1'-0"

Revisions	Date
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-	-
-	-
-	-
-	-
-	-
-	-
-	-

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business

1010 KINGS HIGHWAY SOUTH
BUILDING ONE - 1st FLOOR
CHERRY HILL, NEW JERSEY
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ENVIRONMENTAL CONSULTANT

ENVIRONMENTAL SOLUTIONS GROUP, INC.
A Service Disabled Veteran-Owned Business

4142 OGLETOWN-STANTON ROAD
SUITE 226
NEWARK, DELAWARE 19701-1306

Drawing Title: ACM Critical Barriers - -
Approved: Project Director: - - -
Project Title: Improve Emergency Cache - VAMC, Lebanon, PA
Location: Lebanon, PA -
Date: April 13, 2013 | Checked: KW | Drawn: CMB
Project Number: 528A5-12-517
Building Number: No. 19
Drawing Number: ACM-102
Dwg. 12 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

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GENERAL STRUCTURAL & CONSTRUCTION NOTES

1.0 GENERAL

1. ALL WORK SHALL CONFORM TO THE 2009 INTERNATIONAL BUILDING CODE–PA EDITION, AND TO ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
2. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, SPECIFICATIONS AND DETAILS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.
3. WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN IN CORRESPONDING PLACES SHALL BE REPEATED.
4. JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL PROVIDE FOR DEWATERING AS REQUIRED DURING EXCAVATION AND CONSTRUCTION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. THE CONTRACTOR SHALL COORDINATE OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS AND DEPRESSIONS SHOWN ON THE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
7. ALL COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR IMPROPER INSTALLATION OF STRUCTURAL ELEMENTS OR OTHER ITEMS NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
8. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS, ARCHITECTURAL, AND M.E.P. DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER PRIOR TO PERFORMING THE WORK.
9. THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION SHOWN (DIMENSIONS, ELEVATIONS, ETC.) AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT.
10. THE CONTRACTOR SHALL VERIFY AND/OR ESTABLISH ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. FAILURE TO NOTIFY THE ENGINEER OF UNSATISFACTORY CONDITIONS CONSTITUTES ACCEPTANCE OF UNSATISFACTORY CONDITIONS.
11. IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND PROVIDE A SKETCH OF THE CONDITION. DO NOT COMMENCE WORK UNTIL CONDITION IS RESOLVED AND THE ENGINEER PROPOSES AND APPROVES MODIFICATION.
12. WHERE ALTERATIONS INVOLVE THE EXISTING SUPPORTING STRUCTURE, THE CONTRACTOR SHALL PROVIDE SHORING AND PROTECTION REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE.
13. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGINGS, BRACING, SHEETING AND SHORING, ETC.
14. CONTRACTOR TO PROVIDE SHEETINGS, BRACING AND UNDERPINNING AS NECESSARY TO PREVENT ANY LATERAL OR VERTICAL MOVEMENTS OF EXISTING BUILDINGS, STREETS AND ANY EXISTING UTILITY LINES.
15. BRACING, SHEETING, SHORING, ETC., REQUIRED TO INSURE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDINGS OR NEW CONSTRUCTION, SIDEWALKS, UTILITIES, ETC., SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER ENGAGED BY THE CONTRACTOR. DETAILED SIGNED AND SEALED SHOP DRAWINGS SHALL BE PREPARED INDICATING ALL WORK TO BE PERFORMED. SUBMIT THE SHOP DRAWINGS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS.
16. IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'–0" FROM ANY FOUNDATION WALL. IF IT IS NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'–0" TO THE WALL, THE CONTRACTOR SHALL BE THE SOLE RESPONSIBLE PARTY AND, AT HIS OWN EXPENSE, SHALL PROVIDE ADEQUATE SUPPORTS OR BRACE THE WALL TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.
17. NO BLASTING SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL.
18. SHOP DRAWINGS FOR ALL STRUCTURAL MATERIALS TO BE SUBMITTED TO ENGINEER FOR REVIEW PRIOR TO THE START OF FABRICATION OR COMMENCEMENT OF WORK.
19. REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.
20. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL WHICH SHALL CONSTITUTE CERTIFICATION THAT THE CONTRACTOR HAS VERIFIED ALL CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.
21. THE SHOP DRAWINGS SHALL INCLUDE DIMENSIONAL FLOOR AND ROOF EDGES, OPENINGS AND SLEEVES AT ALL FLOORS REQUIRED FOR ALL TRADES.
22. THE STRUCTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL STRUCTURAL FEATURES, UNLESS NOTED OTHERWISE.
23. INSPECTION IS REQUIRED OF ALL CONSTRUCTION DELINEATED ON THE STRUCTURAL DRAWINGS AND/OR SPECIFICATIONS. THE CONTRACTOR SHALL EMPLOY A TESTING/INSPECTION AGENCY WHICH SHALL PROVIDE PERSONNEL WITH THE FOLLOWING MINIMUM QUALIFICATIONS:
    A. CERTIFIED BY INSTITUTE OF CERTIFIED ENGINEERING TECHNICIANS, OR OTHER RECOGNIZED COMPARABLE ORGANIZATION, AND:
        - FOR INSPECTION, SAMPLING, TESTING CONCRETE AND MASONRY: ACI CERTIFIED CONCRETE FIELD–TESTING TECHNICIAN, GRADE I AND CONSTRUCTION INSPECTOR, LEVEL II
        - STRUCTURAL STEEL INSPECTION: AWS CERTIFIED WELDING INSPECTOR.
24. SUBMIT PERIODIC REPORTS WITHIN ONE BUSINESS DAY AFTER RECEIPT BY THE CONTRACTOR TO ENGINEER DURING CONSTRUCTION. SUBMIT FINAL INSPECTION REPORT SUMMARY FOR EACH DIVISION OF WORK, CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER, THAT INSPECTIONS WERE PERFORMED AND THAT WORK WAS PERFORMED IN ACCORDANCE WITH CONTRACT DOCUMENTS.
25. THE CONTRACTOR SHALL ENGAGE A TESTING AGENCY TO PROVIDE TESTING SERVICES AS INDICATED IN EACH SECTION OF THESE GENERAL NOTES.
26. ALL MATERIALS SHALL BE STORED TO PROTECT THEM FROM EXPOSURE TO THE ELEMENTS.

2.0 EARTHWORK

1. EXCAVATION SHALL BE PERFORMED SO AS NOT TO DISTURB EXISTING UTILITY LINES. VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK. HAND EXCAVATE AROUND UTILITIES AS REQUIRED.
2. COMPACT SOIL TO NOT LESS THAN 95% OF MAXIMUM DENSITY OF MODIFIED PROCTOR PER ASTM D1557.

3.0 FOUNDATIONS

1. FOUNDATIONS HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING CAPACITY BASED UPON ADJACENT BUILDING INFORMATION, KNOWN INFORMATION FROM ADJACENT SITES, AND SIMILAR SOIL CONDITIONS IN THE PROJECT VICINITY. THE SOIL INFORMATION AND BEARING CAPACITY SHALL BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
2. PRIOR TO FOUNDATION CONCRETE PLACEMENT, THE FOUNDATION SUBGRADE SHALL BE APPROVED BY THE INSPECTING GEOTECHNICAL ENGINEER. IF CONDITIONS PROVE TO BE UNACCEPTABLE AT ELEVATIONS SHOWN, FOUNDATION BOTTOMS SHALL BE LOWERED TO ACCEPTABLE SUBGRADE MATERIAL. FILL OVER–EXCAVATION WITH LEAN CONCRETE (2,500 PSI).
3. SLABS ON GRADE FOUNDATIONS SHALL BEAR ON MECHANICALLY COMPACTED SOIL CAPABLE OF SUPPORTING 500 PSF. DRAINAGE FILL UNDER SLABS SHALL BE COMPACTED GRAVEL OR CRUSHED STONE.
4. CONCRETE FOR FOUNDATIONS SHALL BE POURED ON THE SAME DAY THE SUBGRADE IS APPROVED BY THE GEOTECHNICAL ENGINEER.
5. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.

4.0 CONCRETE ANCHORS

1. ALL ANCHORS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
2. THE SPACING, MINIMUM EMBEDMENT AND INSTALLATION OF THE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.

5.0 CAST–IN–PLACE CONCRETE

1. CONCRETE SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318–08), AND CONSTRUCTED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
2. CONCRETE FOR SLABS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,500 psi. AIR ENTRAINMENT SHALL BE 4% TO 6% IN ALL EXPOSED CONCRETE WORK.
3. MAXIMUM WATER/CEMENT RATIOS:
    A. INTERIOR SLABS 0.47
    B. EXTERIOR SLABS 0.44
4. WHERE NOTED, LIGHTWEIGHT SLAB CONCRETE (110 PCF ± 5) SHALL BE PROVIDED WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I OR II. MAXIMUM AGGREGATE SIZE SHALL BE 3/4" AND CONFORM TO ASTM C330. ALL OTHER CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (144 PCF +) WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I. MAXIMUM AGGREGATE SIZE SHALL BE 3/4", CONFORMING TO ASTM C33.
5. REINFORCING STEEL: ASTM A615, GRADE 60.
6. WELDED WIRE REINFORCEMENT (WWR): ASTM A–185
7. LEVELING GROUT SHALL BE NON–SHRINK, NON–METALLIC TYPE, FACTORY PRE–MIXED GROUT IN ACCORDANCE WITH CE–CRD–C621 OR ASTM C109, WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
8. REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
    A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
    B. CONCRETE EXPOSED TO EARTH OR WEATHER:
        - #6 BARS AND LARGER: 2"
        - #5 BARS AND SMALLER: 1 1/2"
    C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTRACT WITH GROUND: 1 1/2"
9. SUBMIT TO ENGINEER REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL AND MIX DESIGNS FOR REVIEW PRIOR TO PLACING ANY CONCRETE. CONSTRUCTION AND CONTROL JOINT LOCATIONS SHALL BE SHOWN ON REINFORCING STEEL SHOP DRAWINGS.
10. SAWCUT 1/4 DEPTH OF SLAB–ON–GRADE FOR CONTROL JOINTS.
11. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, STIRRUPS OR CHAIRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
12. LAP WELDED WIRE REINFORCEMENT TWO (2) FULL WIRE SPACES AT SPLICES AND WIRE TOGETHER.
13. PLACING OF CONCRETE SHALL NOT START UNTIL THE PLACEMENT OF REINFORCING HAS BEEN APPROVED BY THE INSPECTION AGENCY.
14. NO SLEEVE SHALL BE PLACED THOUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE APPROVED SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL SLOTS, PIPE SLEEVES, ETC. AS REQUIRED FOR MECHANICAL TRADES BEFORE CONCRETE IS PLACED.
15. PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY THE STRUCTURAL ENGINEER, A CONCRETE POUR SCHEDULE SHOWING LOCATION OF ALL PROPOSED CONSTRUCTION JOINTS AND WATERSTOPS.
16. CONCRETE SHALL NOT BE PUMPED THROUGH ALUMINUM PIPES AND SHALL NOT BE PLACED IN CONTACT WITH ALUMINUM FORMS, MIXING DRUMS, BUGGIES, CHUTES, CONVEYORS OR OTHER EQUIPMENT MADE OF ALUMINUM.
17. ALL INSERTS AND SLEEVES SHALL BE CAST–IN–PLACE WHENEVER FEASIBLE. DRILLED OR POWDER DRIVEN FASTENERS WILL BE PERMITTED WHEN PROVEN TO THE SATISFACTION OF THE STRUCTURAL ENGINEER THAT THE FASTENERS WILL NOT SPALL THE CONCRETE AND HAVE THE SAME CAPACITY AS CAST–IN–PLACE INSERTS.
18. WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.
19. CHAMFER ALL EXPOSED CONCRETE CORNERS.
20. THE CONCRETE SLABS SHALL BE FINISHED FLAT AND LEVEL WITHIN TOLERANCE, TO THE ELEVATION INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONCRETE REQUIRED DUE TO FORMWORK, METAL DECK, AND FRAMING DEFLECTION TO ACHIEVE THIS FINISHED TOP OF SLAB ELEVATION. THE CONTRACTOR SHALL PROVIDE FOR A MINIMUM OF 5/8" AVERAGE THICKNESS FOR ADDITIONAL CONCRETE DURING PLACEMENT FOR ALL SLABS SUPPORTED AND FORMED ON STEEL DECK OVER THE ENTIRE FLOOR AREA. THE CONTRACTOR SHALL PROVIDE THE MEANS BY WHICH THE MAXIMUM AND MINIMUM CONCRETE SLAB THICKNESS CAN BE MONITORED AND VERIFIED DURING AND AFTER THE PLACING AND FINISHING OPERATIONS.
21. CONSTRUCTION JOINTS FOR SLABS ON METAL DECK SHALL BE LOCATED MIDWAY BETWEEN BEAMS WHERE THE JOINT IS PARALLEL TO THE BEAM SPAN. JOINTS SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF SPAN WHERE THE JOINT IS PERPENDICULAR TO THE BEAM SPAN. PROPOSED CONSTRUCTION JOINT LOCATIONS SHALL BE SHOWN ON REINFORCING STEEL SHOP DRAWINGS. ANY STOP IN CONCRETE WORK MUST BE MADE WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS, UNLESS OTHERWISE SHOWN. ALL REINFORCING IS TO BE CONTINUOUS THROUGH JOINTS.
22. EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE COATING.
23. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI–306. HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI–305R.
24. THROUGHOUT CONSTRUCTION, THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, SNOW, EXCESSIVE HEAT AND FREEZING TEMPERATURES.
25. PREPARE CONCRETE TEST CYLINDERS FROM EACH DAY'S POUR. CYLINDERS SHALL BE PROPERLY CURED AND STORED. SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172.
26. RETAIN LABORATORY TO PROVIDE TESTING SERVICE. SLUMP PER ASTM C143, AIR CONTENT PER ASTM C231 OR C173, CYLINDER TESTS PER ASTM C31 AND C39. ONE SET OF SIX (6) CYLINDERS FOR EACH 50 CUBIC YARDS FOR EACH MIX USED. REPORTS OF ALL TESTS TO BE SUBMITTED TO THE ENGINEER.

6.0 STRUCTURAL STEEL

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE "STEEL CONSTRUCTION MANUAL", THIRTEENTH EDITION, 2005, AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) INCLUDING SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, AND AISC CODE OF STANDARD PRACTICE.
2. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS AND SHALL CONFORM TO "STRUCTURAL WELDING CODE ANSI/AWS D1.1", LATEST EDITION, AMERICAN WELDING SOCIETY (AWS).
3. WIDE FLANGE SHAPES: ASTM A992, GRADE 50
4. OTHER STRUCTURAL SHAPES & PLATES: ASTM A36
5. STEEL TUBING (SQUARE OR RECT.): ASTM A500, GRADE B
6. GALVANIZED STRUCTURAL STEEL:
    A. STRUCTURAL SHAPES AND RODS ASTM A123
    B. BOLTS, FASTENERS AND HARDWARE ASTM A153
7. ALL BOLTED CONNECTIONS SHALL BE WITH ASTM A325 HIGH STRENGTH BOLTS, 3/4" MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.
8. ALL BOLTED CONNECTIONS ON WIND BRACING MEMBERS AND COLUMNS SHALL BE SLIP CRITICAL CONNECTIONS.
9. ANCHOR RODS SHALL CONFORM TO ASTM F1554, UNLESS NOTED OTHERWISE.
10. WELDING ELECTRODES SHALL BE E70XX FOR MANUAL ARC WELDING. ALL WELDERS SHALL BE CERTIFIED BY THE AWS. MINIMUM WELD SIZE SHALL BE 3/16" UNLESS NOTED OTHERWISE.
11. CUTS, HOLES, COPING, ETC. REQUIRED FOR OTHER TRADES OR FIELD CONDITIONS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTTING OR BURNING OF MAIN STRUCTURAL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.
12. SUBMIT SHOP DRAWINGS FOR FABRICATION AND ERECTION OF STRUCTURAL STEEL. CLEARLY INDICATE COORDINATED DIMENSIONS OF MECHANICAL UNIT AND ROOF PENETRATION SIZES. SHOP AND ERECTION DRAWINGS MUST SHOW ALL SHOP/FLOOR AND FIELD WELDS. INITIAL SHOP DRAWING SUBMITTAL SHALL INCLUDE PROPOSED CONNECTION DETAILS AND JOB STANDARDS. PROVIDE SIGNED AND SEALED CALCULATIONS FOR ALL NON–STANDARD CONNECTION DETAILS SHOWING DESIGN CAPACITIES.
13. STEEL MEMBERS SHOWN ON PLAN SHALL BE EQUALLY SPACED UNLESS NOTED OTHERWISE.
14. THE GENERAL CONTRACTOR AND STEEL ERECTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY FABRICATION OR ERECTION ERRORS OR DEVIATIONS AND RECEIVE WRITTEN APPROVAL BEFORE ANY FIELD CORRECTIONS ARE MADE.
15. ALTERNATE CONNECTION DETAILS MAY BE USED IF SUCH DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. HOWEVER, THE ENGINEER SHALL BE THE SOLE JUDGE OF ACCEPTANCE AND THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THOSE DETAILS SHOWN ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS WHICH HE PROPOSES.
16. MAIN SUPPORT MEMBERS FOR THE METAL DECK ARE SHOWN. DURING PREPARATION, SUBMISSION, AND REVIEW OF SHOP DRAWINGS, ANY ADDITIONAL ANGLES OR MISCELLANEOUS ATTACHMENT DETAILS REQUIRED TO SUPPORT THE METAL DECK AT THE REQUIRED ELEVATION SHALL BE PROVIDED BY THE STRUCTURAL STEEL CONTRACTOR.
17. ALL STEEL SHALL BE PAINTED WITH SHOP STANDARD PRIMER UNLESS NOTED OTHERWISE.
18. ALL EXTERIOR EXPOSED STRUCTURAL STEEL SHALL BE HOT–DIPPED GALVANIZED PER ASTM A123 AND A153.
19. FIELD WELDED SURFACES WITHIN 4 INCHES OF WELD SHALL BE CLEANED AND GROUND SMOOTH. AFTER WELDING COAT THE EXPOSED AREA WITH GALVANIZING REPAIR PAINT. GALVANIZING REPAIR PAINT SHALL BE A HIGH ZINC DUST CONTENT PAINT COMPLYING WITH FEDERAL SPECIFICATIONS DOD–P–21035A OR SSPC–PAINT–20, COLD GALVANIZING COMPOUND BY ZRC PRODUCTS CO. OR EQUAL.
20. GUYS AND OTHER BRACING REQUIRED TO PROVIDE LATERAL STABILITY TO STEEL FRAME SHALL BE ADEQUATELY SIZED AND ANCHORED. THIS BRACING SHALL REMAIN UNTIL PERMANENT BRACING ELEMENTS AND ATTACHED CONSTRUCTION IS INSTALLED.
21. ALL CONNECTIONS SHALL BE "FRAMED BEAM CONNECTIONS" DESIGNED IN ACCORDANCE WITH THE AISC MANUAL AND HALF OF THE ALLOWABLE UNIFORM LOAD FROM THE "MAXIMUM TOTAL UNIFORM LOAD" TABLES, BUT NOT LESS THAN 6 KIPS. PROVIDE DOUBLE ANGLE CONNECTIONS OR KNIFE PLATES CONNECTIONS FULL DEPTH OF SUPPORTING BEAM, UNLESS OTHERWISE APPROVED. MINIMUM TWO (2) BOLTS PER CONNECTION. SINGLE ANGLE OR SHEAR TAB CONNECTIONS ARE NOT ACCEPTABLE. ALL BEAM TO COLUMN CONNECTIONS SHALL BE DESIGNED FOR THE MINIMUM SHEAR REACTION INDICATED ABOVE IN COMBINATION WITH A 10 KIP AXIAL FORCE (ACTING IN BOTH TENSION AND COMPRESSION).
22. VISUALLY INSPECT ALL FILLET WELDS. 10 PERCENT OF ALL FIELD FILLET WELDS IN PRIMARY CONNECTIONS AND MULTI–PASS WELDS SHALL BE TESTED BY THE MAGNETIC PARTICLE METHOD, COMPLYING WITH ASTM E709, PERFORMED ON THE ROOT PASS AND ON THE FINISHED WELD.
23. FIELD TEST BOLTED CONNECTIONS IN ACCORDANCE WITH AISC.
24. ALL STEEL SHALL BE THOROUGHLY CLEANED BY POWER TOOL CLEANING PRIOR TO PAINTING.
25. ALL CONNECTIONS SHALL BE SYMMETRICAL ABOUT THE AXIS OF THE MEMBER CONNECTED. PROVIDE ONLY ONE GRADE OF BOLT FOR EACH BOLT DIAMETER TO BE USED IN THE CONNECTIONS. DO NOT MIX GRADES OF BOLTS.

7.0 METAL DECK

1. METAL DECK SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS" OF THE STEEL DECK INSTITUTE (SDI), LATEST EDITION.
2. DECK SHALL CONFORM TO ASTM A653 WITH A MINIMUM YIELD STRENGTH OF 33 KSI.
3. INSTALL IN ACCORDANCE WITH SDI SUGGESTED SPECIFICATIONS UNLESS NOTED OTHERWISE ON THE DRAWINGS. INDIVIDUAL DECK SHEETS SHALL EXTEND OVER AT LEAST THREE SPANS, WITH LAPS TO BE PLACED OVER SUPPORTS.
4. DECK SUPPLIER SHALL PROVIDE ALL ADDITIONAL FRAMING, CLOSURE ANGLES AND PLATES, POUR STOPS, SCREED ANGLES, AND ROOF SUMP PANS AS REQUIRED AT THE EDGES OF ALL OPENINGS AND AT ALL SLAB DEPRESSIONS, OR CHANGES OF DECK DIRECTION, INCLUDING THOSE WHICH HAVE NOT BEEN DETAILED.
5. COMPOSITE DECKS SHALL BE WELDED TO ALL SUPPORTS INCLUDING THE EDGE SUPPORT PARALLEL TO THE DECK SPAN WITH 5/8" DIAMETER (EFFECTIVE FUSION DIAMETER) PLUG WELDS AT 12 INCHES OC INTERIOR AND 6 INCHES OC AT EDGE OF DECK SHEET. FASTEN SIDE LAPS WITH #10 SELF–TAPPING SCREWS AT 30 INCHES OC. HEADED STUDS SHALL BE FIELD INSTALLED BY WELDING THROUGH THE METAL DECK.
6. ALL STEEL FLOOR DECK SHALL BE WELDED TO ALL SUPPORTING STEEL ELEMENTS. WELDING WASHERS SHALL BE USED AS REQUIRED BY THE DECK MANUFACTURER.
7. STEEL DECK SUPPLIER SHALL SUBMIT SHOP DRAWINGS INDICATING THE SHEAR STUD PLACEMENT.
8. PRIOR TO AND DURING CONCRETE PLACEMENT, THE FLOOR DECK SHALL BE PLANKED TO PREVENT DAMAGE TO THE DECK. CONCENTRATED AND IMPACT LOADS SHALL BE AVOIDED.
9. SHEAR CONNECTORS SHALL BE HEADED STUDS CONFORMING TO ASTM A108, GRADES 1010, 1015, 1017, OR 1020. SHEAR CONNECTORS SHALL BE MACHINE WELDED TO STEEL.
10. THE NUMBER OF SHEAR CONNECTORS REQUIRED PER BEAM IS INDICATED ON THE DRAWINGS. WHERE NO SHEAR CONNECTORS ARE INDICATED FOR A BEAM WHICH SUPPORTS A CONCRETE SLAB, PROVIDE SHEAR CONNECTORS AT 24 INCHES O.C.
11. SHEAR CONNECTORS SHALL BE EQUALLY SPACED OVER THE LENGTH OF THE BEAM UNLESS NOTED OTHERWISE. WHERE THE NUMBER OF STEEL DECK CORRUGATIONS AVAILABLE IS LESS THAN THE NUMBER OF SHEAR CONNECTORS REQUIRED, USE PAIRS OF SHEAR CONNECTORS STARTING FROM EACH END OF THE BEAM AND CONTINUING TOWARD THE CENTER UNTIL IT IS POSSIBLE TO RETURN TO A SINGLE SHEAR CONNECTOR IN EACH CORRUGATION.

8.0 DESIGN DATA

1. GOVERNING CODE: 2009 INTERNATIONAL BUILDING CODE
2. FLOOR LIVE LOAD: 125 PSF
3. SNOW LOAD:
    PG (GROUND SNOW LOAD) 30 PSF
    I (SNOW LOAD IMPORTANCE FACTOR) 1.2
4. WIND LOAD:
    BASIC WIND SPEED 90 MPH
    I (WIND IMPORTANCE FACTOR) 1.15
    WIND EXPOSURE B
5. EARTHQUAKE DESIGN DATA:
    SS (MAPPED SPECTRAL RESPONSE COEFFICIENT) 0.228
    S1 (MAPPED SPECTRAL RESPONSE COEFFICIENT) 0.057
    SITE CLASSIFICATION C
    SEISMIC DESIGN CATEGORY C
    I (SEISMIC IMPORTANCE FACTOR) 1.5

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

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ARCHITECT/ENGINEERS:

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1010 KINGS HIGHWAY SOUTH
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FAX: (856)429-5002

Drawing Title: STRUCTURAL NOTES

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: NM | Drawn: JK

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

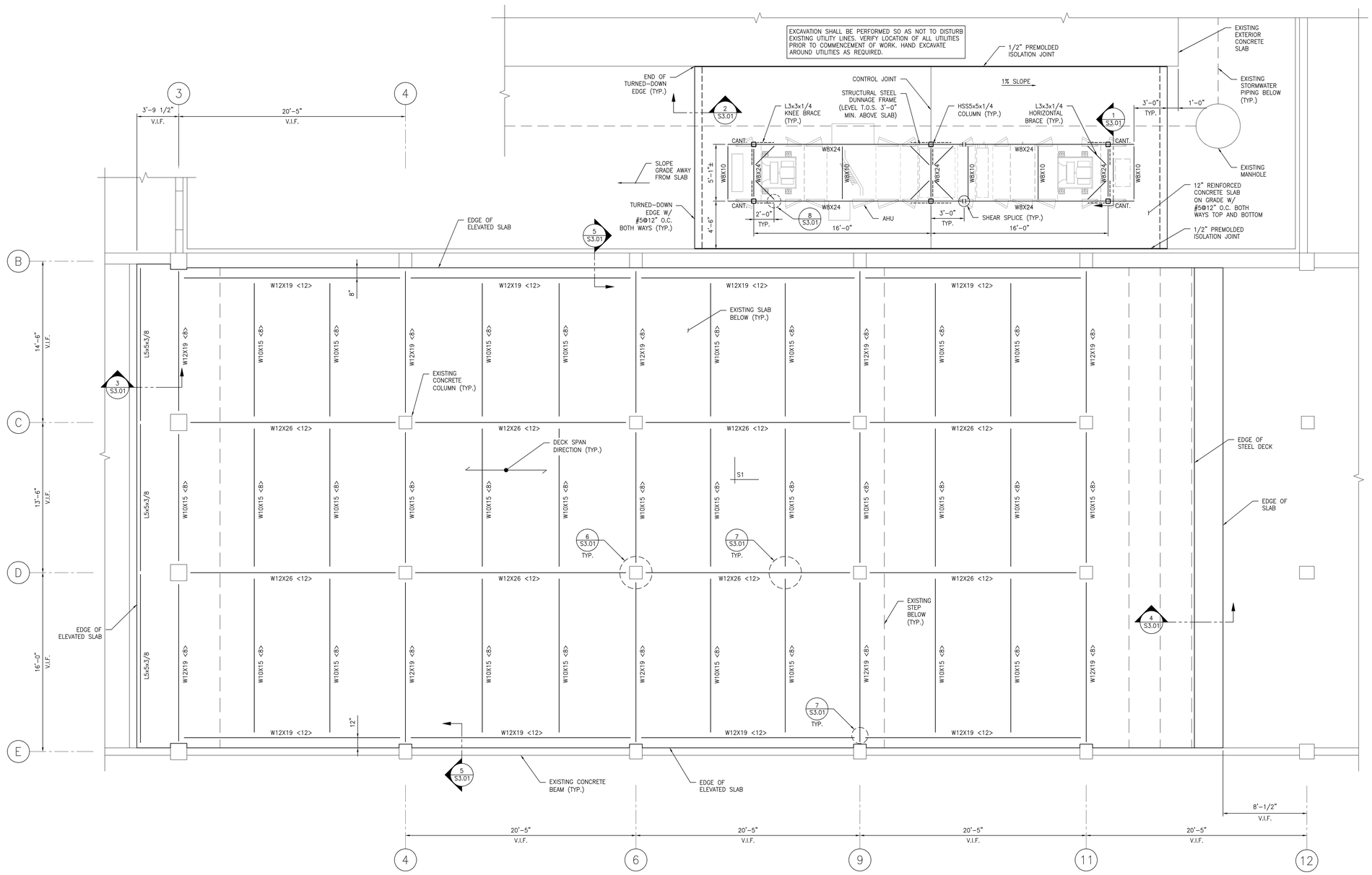
Drawing Number: **S0.01**

Dwg. 13 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



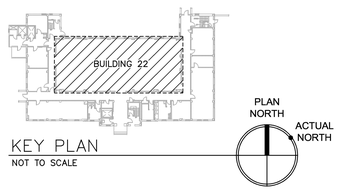
GENERAL SHEET NOTES:

1. S1 DENOTES 5" (TOTAL DEPTH) ELEVATED LIGHTWEIGHT CONCRETE SLAB ON 2" 20 GAGE COMPOSITE DECK (2 VLI) BY VULCRAFT OR APPROVED EQUAL REINFORCED W/ 6x6-W2.1xW2.1 WWR. TOP OF SLAB ELEVATION TO MATCH ADJACENT CORRIDORS.
2. <#> ON FRAMING PLAN DENOTES THE NUMBER OF 3/4" DIA. X 4" LONG HEADED STUDS TO BE PROVIDED AT EVEN SPACES ALONG STEEL BEAM.

1 BLDG 22: FIRST FLOOR STRUCTURAL PLAN

SCALE: 1/4" = 1'-0"

NOTE: DIMENSIONS PROVIDED ARE BASED ON EXISTING BUILDING DRAWINGS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FIELD-VERIFY ALL DIMENSIONS.



KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

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PROFESSIONAL ENGINEER

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ARCHITECT/ENGINEERS:

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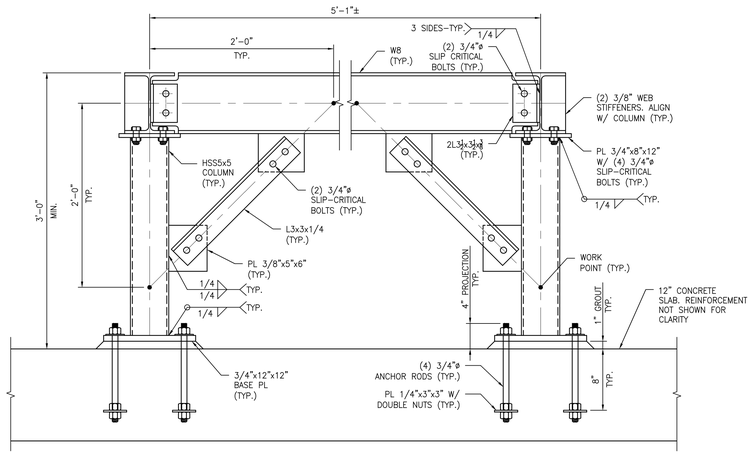
Drawing Title	BLDG 22: FIRST FLOOR STRUCTURAL PLAN
Approved: Project Director	
Project Title	LEBANON - EMERGENCY CACHE
Location	1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date	04-10-2013
Checked	NM
Drawn	JK
Project Number	VA595-11-127
Building Number	BLDGS. 19 & 22
Drawing Number	22-S1.01
	Dwg. 14 of 47

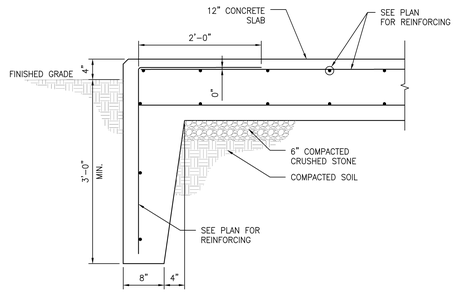
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 DUNNAGE FRAME SECTION
SCALE: 1-1/2" = 1'-0"



2 SLAB-ON-GRADE SECTION
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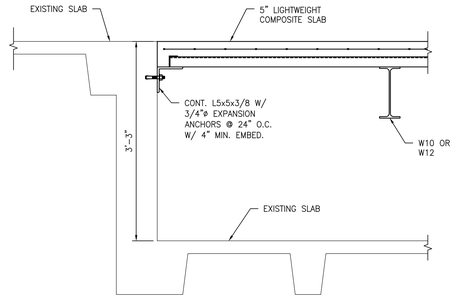
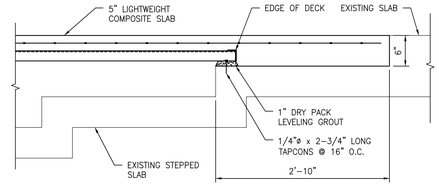
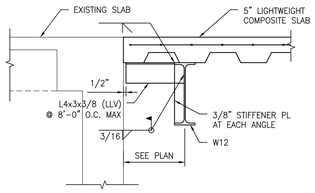


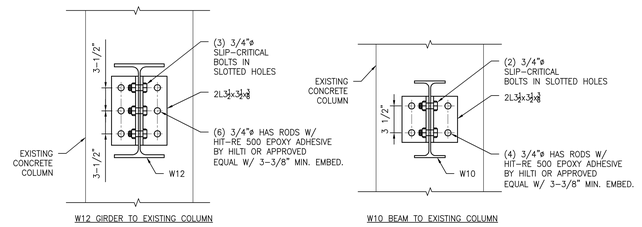
3 ELEVATED SLAB SECTION
SCALE: 1" = 1'-0"



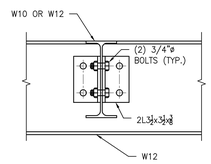
4 ELEVATED SLAB SECTION
SCALE: 1" = 1'-0"



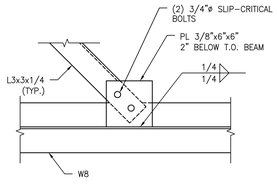
5 ELEVATED SLAB SECTION
SCALE: 1" = 1'-0"



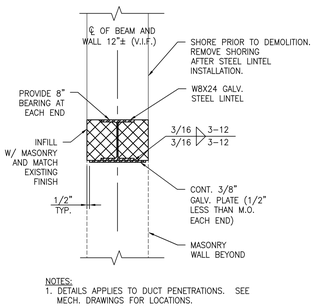
6 STEEL BEAM TO EXISTING CONCRETE COLUMN TYPICAL DETAILS
SCALE: 1-1/2" = 1'-0"



7 STEEL TO STEEL CONNECTION TYPICAL DETAIL
SCALE: 1-1/2" = 1'-0"

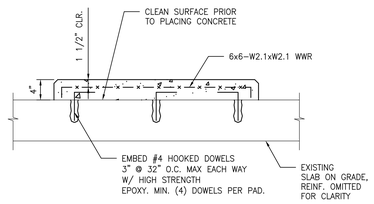


8 HORIZONTAL BRACING TYPICAL DETAIL
SCALE: 1-1/2" = 1'-0"



NOTES:
1. DETAILS APPLIES TO DUCT PENETRATIONS. SEE MECH. DRAWINGS FOR LOCATIONS.

9 STEEL LINTEL TYPICAL DETAIL
SCALE: 1" = 1'-0"



NOTE: SEE M.E.P. DRAWINGS FOR LOCATIONS AND DIMENSIONS OF PADS

10 EQUIPMENT PAD TYPICAL DETAIL
SCALE: 1" = 1'-0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: BLDG 22: STRUCTURAL SECTIONS AND DETAILS

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: NM | Drawn: JK

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **22-S3.01**

Dwg. 15 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

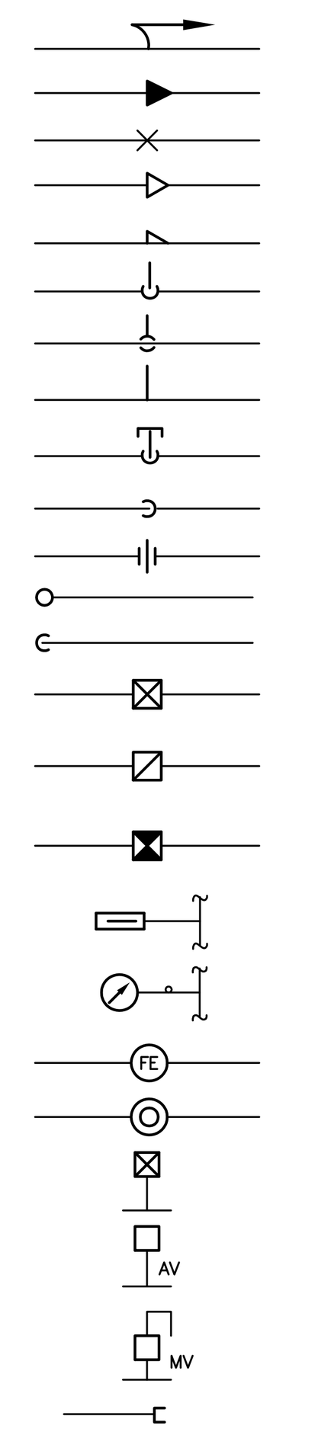
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot

MECHANICAL ABBREVIATIONS

(NOTE: NOT ALL ABBREVIATIONS MAY APPEAR ON DRAWINGS)

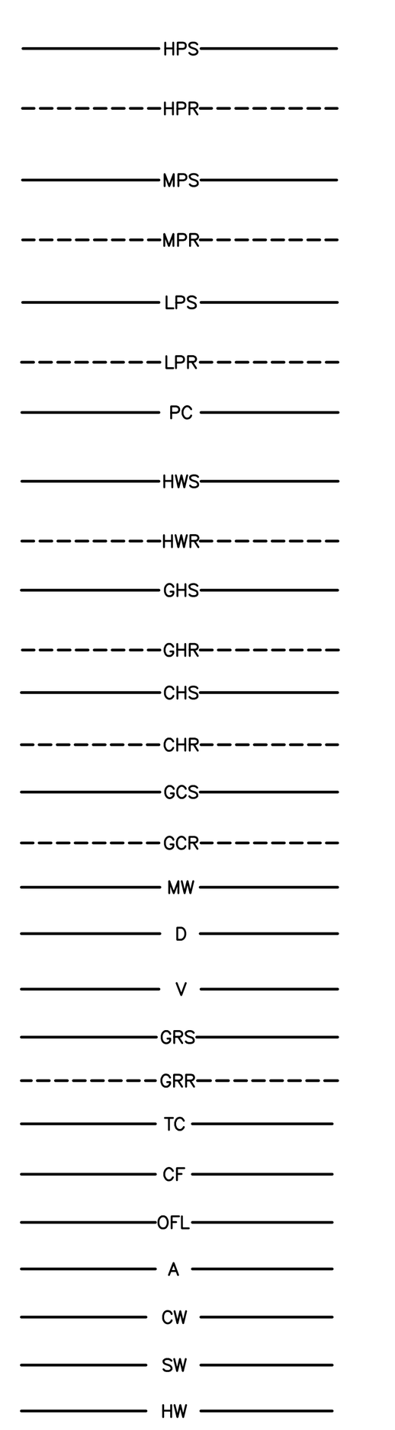
A/E	ARCHITECT / ENGINEER
AAV	AUTOMATIC AIR VENT
AD	ACCESS DOOR
AF	AFTER FILTER
AFF	ABOVE FINISHED FLOOR
AHU	AIR-HANDLING UNIT
AMP	AMPERAGE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AW	AIR WASHER
BD	BUTTERFLY DAMPER
BDD	BACKDRAFT DAMPER
BFP	BACKFLOW PREVENTER
BFT	BOILER PLANT FIRE TUBE
BG	BOTTOM GRILLE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CC	COOLING COIL
CCD	COOLING COIL CONDENSATE DRAIN
CD	CEILING DIFFUSER
CD-1	CONSTRUCTION DOCUMENTS (SUBMISSION1)
CD-2	CONSTRUCTION DOCUMENTS (SUBMISSION2)
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFT	CUBIC FEET
CG	CEILING GRILLE
CH	CHILLER
CHP	CHILLED WATER PUMP
CHW	CHILLER WATER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CI	CAST IRON
CO	CLEAN OUT
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CU	CONDENSING UNIT
CW	COLD WATER (POTABLE)
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN (TO COOLING TOWER)
CWS	CONDENSER WATER SUPPLY (FROM COOLING TOWER)
D	DAMPER - AUTOMATIC
D-1	OUTDOOR AIR DAMPER
D-2	RETURN AIR DAMPER
D-3	RELIEF AIR DAMPER
DB	DECIBELS
Db	DRY-BULB TEMPERATURE
DD-1	DESIGN DEVELOPMENT (SUBMISSION1)
DD-2	DESIGN DEVELOPMENT (SUBMISSION2)
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DF	DIFFUSER
DIA	DIAMETER
DOM	DOMESTIC
DP	DEW POINT TEMPERATURE
DPA	DIFFERENTIAL PRESSURE ASSEMBLY
DPS	DIFFERENTIAL PRESSURE SENSOR
DSS	DUCTLESS SPLIT-SYSTEM (EVAPORATOR)
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EH	EXHAUST HOOD
EJ	EXPANSION JOINT
ENT	ENTERING
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
(E)	EXISTING
F	FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
F/SDPR	COMBINATION FIRE SMOKE DAMPER
FA	FREE AREA
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT (4 PIPE)
FCUC	FAN COIL UNIT COOLING ONLY
FCUH	FAN COIL UNIT HEATING ONLY
FCW	FORWARD CURVED WHEEL (FAN)
FD	FLOOR DRAIN
FD	FIRE DAMPER
FM	FLOW METER
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FR	FLOOR REGISTER
FS	FLOW SWITCH
FSTAT	FREEZESTAT
FT	FEET
FT-LB	FOOT-POUND
FTR	FIN TUBE RADIATION
FV	FACE VELOCITY
GA	GAUGE
GAL	GALLONS
GH	GRAVITY HOOD
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRR	GLYCOL-WATER RUN AROUND RETURN
GRS	GLYCOL-WATER RUN AROUND SUPPLY
GS	GALVANIZED STEEL
H&CW	HOT & COLD WATER
HC	HEATING COIL
HD	HEAD
HD	HOOD
HOA	HAND/OFF/AUTOMATIC
HP	HORSEPOWER
HRC	HEAT RECOVERY COIL
HRD	HEAT RECOVERY DEVICE
HRW	HEAT RECOVERY WHEEL
HSTAT	HUMIDISTAT
HVU	HEATING AND VENTILATING UNIT
HW	HOT WATER
HWC	HOT WATER COIL
HWHC	HOT WATER HEATING COIL
HWP	HEATING HOT WATER PUMP
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HWUH	HOT WATER UNIT HEATER
HX	HEAT EXCHANGER
HZ	HERTZ
I/O	INPUT/OUTPUT
IAQ	INDOOR AIR QUALITY
ID	INSIDE DIAMETER
IFB	INTEGRAL FACE AND BYPASS
IN	INCHES
IN HG	INCHES OF MERCURY
IN WC	INCH WATER COLUMN
IRH	INFRARED HEATER
IS	INSECT SCREEN
IU	INDUCTION UNIT
IV	INLET VANES
J	INTENTIONALLY LEFT BLANK
kPa	KILOPASCAL
kW	KILOWATT
L/s	LITERS PER SECOND
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT (FEET)
LH	LATENT HEAT
LPR	LOW PRESSURE RETURN (STEAM CONDENSATE)
LPRC	LOW PRESSURE STEAM RETURN (CLEAN)
LPS	LOW PRESSURE STEAM
LPSC	LOW PRESSURE STEAM (CLEAN)
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LVG	LEAVING
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MIXING BOX
MBH	1000 BTUH
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MIN	MINIMUM
MM	MILLIMETER
MOD	MOTOR OPERATED DAMPER
MOV	MOTOR OPERATED VALVE
MTD	MEAN TEMPERATURE DIFFERENCE
MVD	MANUAL VOLUME DAMPER
MZ	MULTI-ZONE
(N)	NEW
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAG	OUTSIDE AIR GRILLE
OAI	OUTSIDE AIR INTAKE
OD	OUTSIDE DIAMETER
P	PUMP
PA	PASCAL
PC	PUMPED CONDENSATE
PCF	POUNDS PER CUBIC FOOT (FEET)
PD	PRESSURE DROP
PG	PRESSURE GAGE
PHC	PREHEAT COIL
PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH -ABSOLUTE
PSIG	POUNDS PER SQUARE INCH -GAGE
PSV	PRESSURE SAFETY VALVE
(R)	RELOCATE/RELOCATED
R/E	RETURN OR EXHAUST
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
REA	RELIEF AIR
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUN LOAD AMPERE
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RTU	ROOF TOP UNIT
RV	RELIEF VALVE
SA	SUPPLY AIR
SAD	SOUND ATTENUATOR DEVICE
SAT	SUPPLY AIR TEMPERATURE
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	SMOKE DETECTOR
SD	SUPPLY AIR DIFFUSER
SD-1	SCHEMATIC DESIGN (SUBMISSION1)
SD-2	SCHEMATIC DESIGN (SUBMISSION2)
SDPR	SMOKE DAMPER
SDR	SMOKE DAMPER (RETURN)
SDS	SMOKE DAMPER (SUPPLY)
SEN	SENSIBLE HEAT
SF	SUPPLY FAN
SG	SUPPLY AIR GRILLE
SP	STATIC PRESSURE
SP GR	SPECIFIC GRAVITY
SPS	STATIC PRESSURE SENSOR
SQ FT	SQUARE FOOT (FEET)
SR	SUPPLY AIR REGISTER
SS	STAINLESS STEEL
ST	STEAM TRAP
SVS	STEAM VENT SILENCER
T&PCV	TEMPERATURE AND PRESSURE CONTROL VALVE
TAB	TESTING, ADJUSTING, BALANCE
TD	TEMPERATURE DIFFERENCE
TDH	TOTAL DYNAMIC HEAD
TG	TRANSFER GRILLE
TP	TRAP
TR	TOP REGISTER
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TU	TERMINAL UNIT
UC	UNDER CUT
UL	UNDERWRITERS LABORATORY
V	VALVE
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
VFD	VARIABLE FREQUENCY DRIVE
VI	VIBRATION ISOLATOR
VIV	VARIABLE INLET VANES
VPS	VARIABLE PRIMARY SYSTEM
VR	VACUUM (STEAM CONDENSATE) RETURN
W	WATTS
Wb	WET-BULB (TEMPERATURE)
WC	WATER COOLED
WEF	WALL EXHAUST FAN
WF	WATER FILTER
WFCV	WATER FLOW CONTROL VALVE
WFM	WATER FLOW METER
WFMD	WATER FLOW MEASURING DEVICE
WG	WATER GAGE
WHA	WATER HAMMER ARRESTOR

GENERAL PIPING SYMBOLS



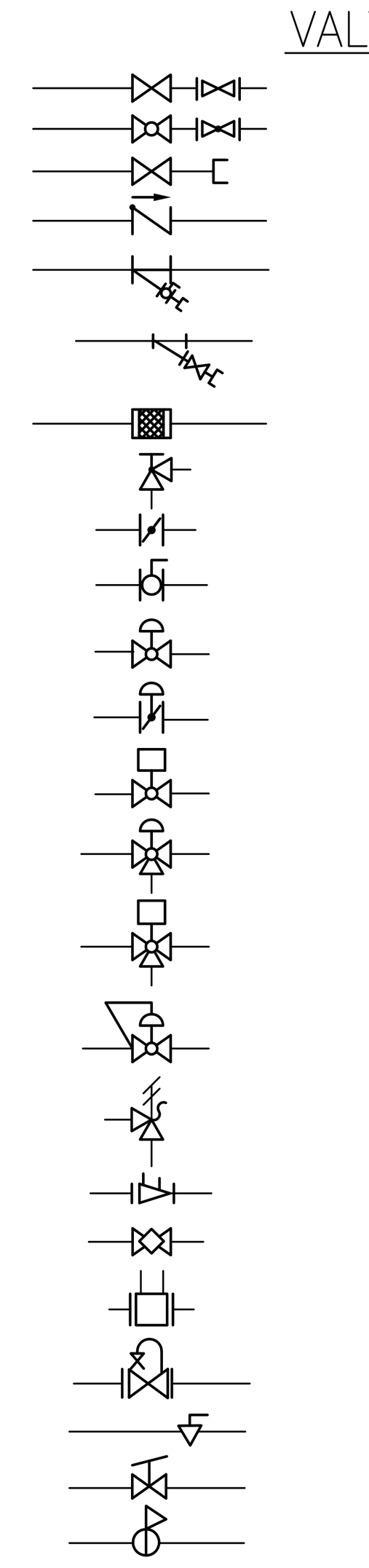
- DIRECTION OF PIPE PITCH (DOWN)
- DIRECTION OF FLOW
- ANCHOR
- REDUCER OR INCREASER
- ECCENTRIC REDUCER
- TOP CONNECTION, 45° OR 90°
- BOTTOM CONNECTION, 45° OR 90°
- SIDE CONNECTION
- CAPPED OUTLET
- RISE OR DROP IN PIPE
- UNION
- PIPE UP
- PIPE DOWN
- INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
- FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
- THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL
- THERMOMETER
- PRESSURE GAGE
- FLOW ELEMENT
- REFRIGERANT SIGHT GLASS
- TEST PLUG (PRESSURE/TEMPERATURE)
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- QUICK-COUPLE HOSE CONNECTOR

PIPING SYMBOLS



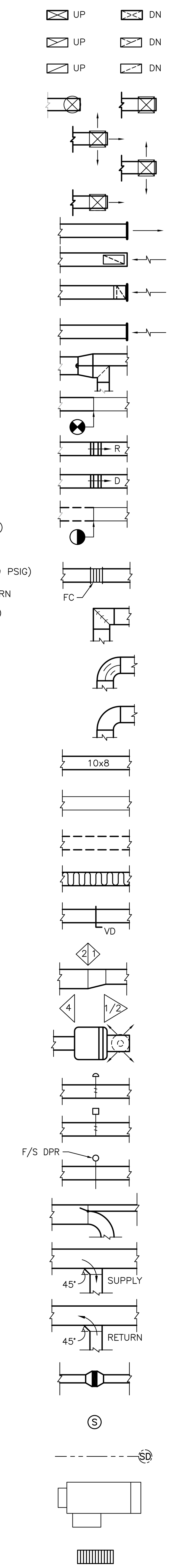
Symbol	Description
HPS	HIGH PRESSURE STEAM (60 PSIG AND ABOVE)
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM (16 PSIG THRU 59 PSIG)
MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM (15 PSIG AND BELOW)
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
PC	CONDENSATE PUMP DISCHARGE
HWS	HOT WATER HEATING SUPPLY
HWR	HOT WATER HEATING RETURN
GHS	GLYCOL-WATER HEATING SUPPLY
GHR	GLYCOL-WATER HEATING RETURN
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
GCS	CHILLED GLYCOL-WATER SUPPLY
GCR	CHILLED GLYCOL-WATER RETURN
MW	MAKE-UP WATER
D	DRAIN LINE
V	VENT LINE
GRS	GLYCOL-WATER RUN AROUND SUPPLY
GRR	GLYCOL-WATER RUN AROUND RETURN
TC	TUBE CLEANER WATER SUPPLY
CF	CHEMICAL FEED
OFL	OVERFLOW
A	COMPRESSED AIR
CW	COLD WATER (CITY WATER)
SW	SOFTENED WATER
HW	HOT WATER

VALVE SYMBOLS



- GATE VALVE - THREADED/FLANGED
- GLOBE VALVE - THREADED/FLANGED
- GATE VALVE WITH 3/4" HOSE ADAPTER
- CHECK VALVE
- WYE STRAINER (WITH BALL VALVE & HOSE CONNECTION)
- WYE STRAINER WITH VALVED DRAIN AND QUICK-COUPLE HOSE CONNECTOR
- FLEXIBLE CONNECTION
- ANGLE GLOBE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- MODULATING CONTROL VALVE
- MODULATING CONTROL BUTTERFLY VALVE
- TWO POSITION CONTROL VALVE
- THREE-WAY MODULATING CONTROL VALVE
- THREE-WAY TWO POSITION CONTROL VALVE
- PRESSURE REGULATING VALVE
- PRESSURE SAFETY VALVE
- AUTOMATIC BALANCING CONTROL VALVE
- WATER BALANCE DEVICE
- CIRCUIT SETTER VALVE
- GATE VALVE WITH GLOBE-VALVED BYPASS
- PLUG VALVE
- CONTROL VALVE (CV) - FLOAT-OPERATED
- PRESSURE REDUCING VALVE (PRV)

DUCTWORK SYMBOLS



- SUPPLY DUCT (UP & DOWN)
- EXHAUST DUCT (UP & DOWN)
- RETURN DUCT (UP & DOWN)
- ROUND AND SQUARE 4-WAY CEILING DIFFUSERS
- SQUARE 3-WAY CEILING DIFFUSERS
- SQUARE 2-WAY CEILING DIFFUSERS
- SQUARE 1-WAY CEILING DIFFUSERS
- SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)
- EXHAUST OR RETURN CEILING REGISTER OR GRILLE
- EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE (WALL TYPE)
- EXHAUST OR RETURN REGISTER OR TOP GRILLE (WALL TYPE)
- VANED ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF
- CONNECT NEW DUCT TO EXISTING DUCT
- INCLINED RISE, IN DIRECTION OF AIR FLOW
- INCLINED DROP, IN DIRECTION OF AIR FLOW
- LIMIT OF DEMOLITION
- FLEXIBLE CONNECTION, EQUIPMENT, VIBRATION, OR SEISMIC
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
- VANED ELBOW (SHORT RADIUS)
- STANDARD RADIUS ELBOW (LONG RADIUS)
- NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)
- EXISTING DUCT TO REMAIN
- EXISTING DUCT TO BE REMOVED
- FLEXIBLE DUCTWORK (INSULATED)
- MANUAL VOLUME DAMPER
- POINT OF CHANGE IN DUCT CONSTRUCTION BY STATIC PRESSURE CLASS. THE NUMBER ASSIGNS PRESSURE CLASS (IN. OF WATER) WHICH WILL ACCOMMODATE MAXIMUM OPERATING PRESSURE IN THE DUCT SUBSECTION. THE SYMBOL CONTINUES THE ASSIGNMENT UNTIL THE DUCT TERMINATES OR ANOTHER SYMBOL APPEARS. A "N" SUPERSCRIPT INDICATES NEGATIVE PRESSURE.
- AUTOMATIC CONTROL DAMPER MODULATING
- AUTOMATIC CONTROL DAMPER TWO POSITION
- COMBINATION FIRE/SMOKE DAMPER
- MANUAL SPLITTER DAMPER
- STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45° TAP)
- DUCT MOUNTED COIL (HOT WATER OR STEAM COIL)
- SMOKE DETECTOR - DUCT MOUNTED
- SMOKE DAMPER
- AIR TERMINAL UNIT WITH INTEGRAL REHEAT COIL
- REHEAT COIL

GENERAL NOTES AND CONDITIONS

1. THESE DRAWINGS WERE PREPARED FROM INFORMATION TAKEN FROM THE AVAILABLE BUILDING DRAWINGS, ARCHITECTURAL BACKGROUNDS PROVIDED BY THE OWNER AND FIELD SURVEY INFORMATION COMPILED BY THE ENGINEERING DESIGN TEAM FOR THE PURPOSE OF ENGINEERING DESIGN. EXISTING CONDITIONS ARE SHOWN AS ACCURATELY AS POSSIBLE. THERE IS THE POSSIBILITY THAT CONDITIONS SHOWN ARE NOT EXACTLY AS EXISTING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, LOCATIONS, SIZES AND CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO BEGINNING INSTALLATION OR FABRICATION WORK.
   - 1.1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE PLANS AND SPECIFICATIONS, AS WELL AS ALL RELATED PROJECT PLANS AND SPECIFICATIONS FROM OTHER DISCIPLINES, TO BECOME FAMILIAR WITH THE FULL PROJECT SCOPE AND COORDINATED RESPONSIBILITIES.
   - 1.2. SHOULD IT APPEAR THAT THE WORK INTENDED TO BE DESCRIBED OR RELATED WORK ARE NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THE DRAWINGS, OR IN THE SPECIFICATIONS, CONSULT THE ENGINEER FOR NECESSARY CLARIFICATIONS, AND CONFORM TO THOSE CLARIFICATIONS INSOFAR AS THEY ARE CONSISTENT WITH THE ORIGINAL DRAWINGS AND SPECIFICATIONS. IN NO CASE SHALL WORK PROCEED IN UNCERTAINTY.
   - 1.3. EQUIPMENT ARRANGEMENTS ARE DESIGNED TO SHOW PREFERRED CONFIGURATIONS TO SUIT KNOWN CONDITIONS. ACTUAL INSTALLATION BY CONTRACTOR MAY BE ALTERED AS REQUIRED TO SUIT FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION WITHOUT COMPROMISING THE INTENT OF THE ORIGINAL DESIGN. COORDINATE ANY MODIFICATIONS WITH THE ENGINEER AND OWNER PRIOR TO STARTING WORK IN AREAS AFFECTED.
   - 1.4. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT SITE PRIOR TO STARTING WORK.
   - 1.5. DO NOT SCALE DRAWINGS.
2. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES AS THE NATURE AND SCOPE OF THE WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND ENSURE THAT ALL ALTERNATE PRICING INFORMATION NOTED WITHIN THE CONSTRUCTION DOCUMENTS HAVE BEEN INCLUDED WITHIN THE ORIGINAL BID SUBMISSION. LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED, OR FOR ANY DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ACCEPTED.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT ALL RULES AND REGULATIONS, INCLUDING THOSE WHICH MAY BE ISSUED BY THE OWNER, ARE BEING OBSERVED, PARTICULARLY WORKPLACE SAFETY AND THE CONDUCT OF ALL THOSE EMPLOYED DIRECTLY AND INDIRECTLY ON THE PREMISES, AND THE OWNER'S EMPLOYEES WHO MAY BE IMPACTED OR AFFECTED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL INSTALL SIGNAGE, BARRIERS, AND OTHER MEANS TO PROVIDE WARNING AND PERSONNEL SAFETY. PLACEMENT OF THESE ITEMS WILL BE COORDINATED WITH THE OWNER AND HIS ONGOING OPERATIONS AND WILL PROMPTLY BE REVISED WHEN WORK IN A PARTICULAR AREA HAS BEEN COMPLETED.
   - 3.1. DURING PERFORMANCE OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION AND MAINTENANCE OF WARNING SIGNS, LIGHT SIGNAL DEVICES, GUARD LIGHTS, BARRICADES, GUARD RAILS, FENCES AND OTHER DEVICES, APPROPRIATELY LOCATED ON AND AROUND THE JOB SITE WHICH GIVE PROPER AND UNDERSTANDABLE WARNING TO PERSONS WITH REGARD TO HAZARDOUS CONDITIONS, EQUIPMENT AND OPERATIONS BEING PERFORMED IN CONJUNCTION WITH THE WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH OTHER TRADES FOR ITEMS IN THEIR SCOPE OF WORK WHICH COULD REQUIRE ADDITIONAL MECHANICAL/PLUMBING WORK, AND ITEMS THAT ARE NOT INDICATED ON THE DRAWINGS.
5. THIS INSTALLATION WILL CONFORM TO ALL CODES AND THE REQUIREMENTS OF FEDERAL, STATE, AND LOCAL REGULATORY AGENCIES HAVING JURISDICTION. IN PARTICULAR, THE WORK WILL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE PENNSYLVANIA UNIFORM CONSTRUCTION CODE (UCC), INCLUDING ALL OF ITS APPLICABLE SUBCODES AND AMENDMENTS.
6. ALL WORK WILL BE LAWFULLY EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND WILL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING CODES (ABOVE), INDUSTRY STANDARDS, AND IN CONFORMANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
7. WORK UNDER THIS CONTRACT SHALL CONSIST OF THE CONTRACTOR PROVIDING ALL LABOR, MATERIALS, AND SERVICES, INCLUDING WORK NOT SPECIFICALLY SHOWN BUT REASONABLY IMPLIED. THIS SHALL INCLUDE CUTTING, PATCHING AND RESTORATION OF EXISTING SURFACES DAMAGED DURING THE CONSTRUCTION. CONTRACTOR SHALL ALSO PROVIDE ALL EQUIPMENT SHOWN OR SPECIFIED OR AN APPROVED EQUIVALENT. SUBSTITUTED EQUIPMENT OR MATERIALS SHALL NOT BE INSTALLED UNTIL GIVEN WRITTEN APPROVAL BY THE OWNER.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS INCURRED FOR NONCOMPLIANCE WITH THESE CONTRACT DOCUMENTS. CONTRACTOR WILL NOT BE ALLOWED CHANGE ORDERS FOR PROBLEMS ARISING FROM NEGLECT OF PROVISIONS INCLUDED IN THESE CONDITIONS.
9. MAINTAIN ORDERLY HOUSEKEEPING DURING CONSTRUCTION, AND UPON SUBSTANTIAL COMPLETION PERFORM FINAL CLEANUP. REMOVE CONSTRUCTION RUBBISH, SCAFFOLDING, EQUIPMENT, TEMPORARY PROTECTION, TEMPORARY FIELD STRUCTURES, AND OTHER MATERIALS OR EQUIPMENT THAT WAS REQUIRED IN CONNECTION WITH THE CONSTRUCTION, BUT NOT A PERMANENT PART THEREOF.
10. THOSE PERFORMING WORK AS A CONTRACTOR MUST EXAMINE SUBSTRATES AND CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE CONTRACTOR IN WRITING, OF CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. COMMENCEMENT OF WORK BY A TRADE ON A SURFACE OR CONSTRUCTION SHALL IMPLY ACCEPTANCE OF SUCH SURFACE OR CONSTRUCTION. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
11. THE CONTRACTOR SHALL SECURE ALL PERMITS AND APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES AND CERTIFICATES OF INSPECTION REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER ALL PERMITS, CERTIFICATES AND APPROVALS TO THE OWNER AGENT PRIOR TO FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR MUST FILE NECESSARY DRAWINGS, PREPARE DOCUMENTS AND MAKE APPLICATIONS FOR EACH REQUIRE PERMIT AND INSPECTION, PRIOR TO COMMENCING WORK TO AVOID DELAYS DURING CONSTRUCTION.
12. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MANUFACTURERS DATA SHEETS ON ALL EQUIPMENT AND MATERIALS SPECIFIED ON DRAWINGS FOR APPROVAL BY OWNER OR AGENT FOR THE OWNER. THESE DRAWINGS OR SHEETS SHALL CONTAIN ALL NECESSARY DATA, I.E., MANUFACTURER, CATALOG NUMBER, SIZE, DIMENSIONS, CAPACITY, WIRING DETAILS AND ALL OTHER ENGINEERING DATA AND DETAILS NECESSARY FOR COMPLETE CLARITY AND INSTALLATION.
13. THE CONTRACTOR SHALL KEEP ONE SET OF THE LATEST ISSUE OF DRAWINGS WHICH SHALL REFLECT THE ACTUAL INSTALLED CONDITIONS AND CONNECTIONS OF ALL EQUIPMENT AND DEVICES. THE CONTRACTOR SHALL PROVIDE COPIES OF ALL MAINTENANCE INFORMATION AND INSTRUCTIONS RECEIVED WITH EQUIPMENT AND SYSTEMS. ALL "AS-BUILT" DRAWINGS AND MISCELLANEOUS INFORMATION SHALL BE GIVEN TO THE OWNER AND ENGINEER AT COMPLETION OF WORK. THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL AND LABOR TO BE FREE FROM DEFECTS FOR A ONE YEAR PERIOD FROM THE TIME OF OWNER ACCEPTANCE. ANY DEFECTS OCCURRING DURING THIS PERIOD SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
14. AS DIRECTED BY THE OWNER, ALL EXISTING EQUIPMENT AND MATERIAL IN USABLE CONDITION THAT IS REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER, OR HANDLED AS INSTRUCTED BY THE OWNER, BE DISPOSED OF BY THE CONTRACTOR. ALL MATERIALS DEEMED FOR REMOVAL SHALL BE RECYCLED WHENEVER POSSIBLE, IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH WITHIN SPECIFICATION SECTION 01 74 19 (CONSTRUCTION WASTE MANAGEMENT).

GENERAL NOTES AND CONDITIONS (cont'd)

15. CONTRACTOR IS TO PROVIDE ALL REQUIRED SCAFFOLDING, LADDERS, RIGGING, HOISTING AND ALL OTHER EQUIPMENT REQUIRED FOR THE INSTALLATION OF THEIR WORK.
16. ESTABLISH PASSAGE CLEARANCES REQUIRED TO DELIVER, INSTALL AND ERECT ALL REQUIRE EQUIPMENT. IF STRUCTURES, EQUIPMENT AND SYSTEMS MUST BE ALTERED TO PROVIDE PASSAGE OF EQUIPMENT, THE CONTRACTOR SHALL RESTORE STRUCTURES, EQUIPMENT AND SYSTEMS TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE; INCLUDING REMOVING AND REPLACEMENT OF ALL CEILING AS REQUIRED TO COMPLETE THE WORK.
17. EXCAVATION FOR UNDER SLAB OR UNDERGROUND INSTALLATION OF CONDUITS SHALL BE APPROACHED WITH EXTREME CAUTION SO AS NOT TO DAMAGE EXISTING UNDERGROUND PIPING, WIRING AND CONDUITS.

HVAC NOTES AND CONDITIONS:

1. ALL HVAC EQUIPMENT SHALL MEET THE REQUIREMENTS SET FORTH IN THE ANSI/ASHRAE/IESNA STANDARD 90.1 ENTITLED "ENERGY STANDARDS FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS".
2. ALL METALLIC DUCTWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARD "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" AND NFPA STANDARD 90A TITLED "INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS". ALL DUCTWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SMACNA PRESSURE CLASS.
3. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS. CONTRACTOR SHALL INCREASE THE DUCT SIZE ACCORDINGLY TO COMPENSATE FOR ACOUSTICAL DUCT LINING THICKNESS (UNLESS OTHERWISE NOTED). CONTRACTOR MAY ADJUST DUCT SIZES ACCORDINGLY TO SUIT FIELD CONDITIONS AS LONG AS THE DUCT FREE AREA AND STATIC PRESSURE DROP ARE EQUAL TO THE PROJECT DOCUMENTS.
4. CONTRACTOR SHALL PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL FANS, VALVES, COILS AND MECHANICAL EQUIPMENT.
5. ADEQUATELY SIZED ACCESS PANELS SHOULD BE PROVIDED ON BOTH SIDES OF THE SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, HUMIDIFIERS, COILS AND OTHER DEVICES LOCATED IN THE DUCTWORK WHICH REQUIRE INSPECTION AND/OR MAINTENANCE.
6. CONTRACTOR SHALL PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCT WORK SYSTEMS (SUPPLY, RETURN, VENTILATION AIR AND EXHAUST) CONNECTED TO ALL AIR HANDLING UNITS, FANS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT (UNLESS NOTED OTHERWISE).
7. ALL AIR HANDLING SYSTEMS SHALL BE DESIGNED AND INSTALLED WITH BALANCE DAMPERS LOCATED IN THE MAIN SUPPLY, EXHAUST AND OUTSIDE AIR DUCTS FOR PROPER BALANCING OF EACH SYSTEM.
8. DUCTWORK WILL INCLUDE ALL DUCTS, FITTINGS, TURNING VANES, DAMPERS, SUPPORTS, AND ALL ACCESSORIES, SUBASSEMBLIES, AND PARTS INCORPORATED THEREIN OR REQUIRED FOR THE INSTALLATION AND COMPLETION OF SYSTEMS. ALL SUPPLY AND RETURN DUCT BRANCHES SHALL BE DESIGNED AND INSTALLED WITH BALANCE DAMPERS.
9. UNLESS NOTED OTHERWISE DUCT LEAKAGE CLASSES AND SEAL CLASSES WILL BE IN ACCORDANCE WITH CLASSES AND STANDARDS DESCRIBED IN SMACNA "DUCT CONNECTION STANDARDS METAL AND FLEXIBLE" AND "SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL".
10. SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES AND 45 DEGREE ENTRY OR CONICAL DUCT BRANCH CONNECTIONS SHALL BE USED THROUGHOUT.
11. ALL DAMPER SHAFTING, RODS AND LINKAGE WILL HAVE CORROSION RESISTANT FINISH. ALL VOLUME DAMPERS WILL MOVE FREELY THROUGH FULL TRAVEL WITHOUT BINDINGS.
12. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVING DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST.
13. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
14. INSTALL NEW THERMOSTATS FOR ALL NEW AND EXISTING ZONES.
15. CONTRACTOR SHALL PROPERLY SUPPORT & BRACE ALL DUCTWORK IN ACCORDANCE WITH SMACNA STANDARDS. DUCTWORK SUPPORT MATERIALS, UNLESS OTHERWISE INDICATED, SUPPORTS, FASTENERS, ANCHORS, STRAPS, TRIM AND ANGLES WILL GENERALLY BE THE SAME MATERIAL AS THE DUCTWORK, HOT DIPPED GALVANIZED.
16. DUCT HANGERS, SUPPORTS AND METHODS OF INSTALLATION WILL CONFORM TO SMACNA STANDARDS AND THE MANUFACTURERS' INSTALLATION REQUIREMENTS WHERE NOT OTHERWISE SPECIFIED, INDICATED OR REQUIRED.
17. ALL INTERIOR AND EXTERIOR WALL, CEILING AND ROOF OPENINGS AND DUCT AND PIPE THROUGH WALL PENETRATIONS, FRAMING, SLEEVES, WEATHERPROOFING AND FIRE SEALING SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR, UNLESS NOTED OTHERWISE.
18. CONTRACTOR SHALL PROVIDE AND INSTALL ALL FIRE DAMPERS IN ACCORDANCE WITH UL 555 AND MANUFACTURER'S REQUIREMENTS WHERE DUCTS PENETRATE FIRE RATED WALLS OR FLOORS. ALL FIRE DAMPERS SHALL BE UL LISTED AND LABELED CONSISTENT WITH THE WALLS OR FLOORS THAT ARE PENETRATED. PROVIDE ACCESS DOORS SIZED AND LOCATED TO FACILITATE TESTING AND RESETTING OF ALL FIRE DAMPERS.
19. INSULATE PER SPECIFICATION SECTION 23 07 11.
20. THE NEW DUCT SYSTEM IS TO BE CLEANED THOROUGHLY OF ALL DEBRIS BEFORE INSTALLING INLET/OUTLET DEVICES.
21. CONTRACTOR SHALL TEST ADJUST & BALANCE THE COMPLETED SYSTEM. ALL BALANCING WORK SHALL BE DONE UNDER THE DIRECT SUPERVISION OF AN AABC OR NEBB-QUALIFIED SUPERVISOR WHO SHALL CERTIFY THE RESULTS.
22. TEST, ADJUST AND BALANCE WORK WILL DEMONSTRATE THAT ALL SYSTEMS OPERATE AS THEY WERE INTENDED TO. UPON COMPLETION OF THE WORK A WRITTEN TEST AND BALANCE REPORT WILL BE SUBMITTED TO THE OWNER. FORMS AND PROCEDURES UTILIZED FOR THIS WORK WILL BE AS PROPOSED BY THE AABC OR OTHER NATIONALLY RECOGNIZED ORGANIZATION ACCEPTABLE TO THE OWNER.
23. ALL DUCTWORK,PIPING AND EQUIPMENT SHOWN ON NEW WORK PLANS AND DETAILS SHALL BE CONSIDERED AS NEW UNLESS IDENTIFIED AS EXISTING TO REMAIN.

PIPING NOTES

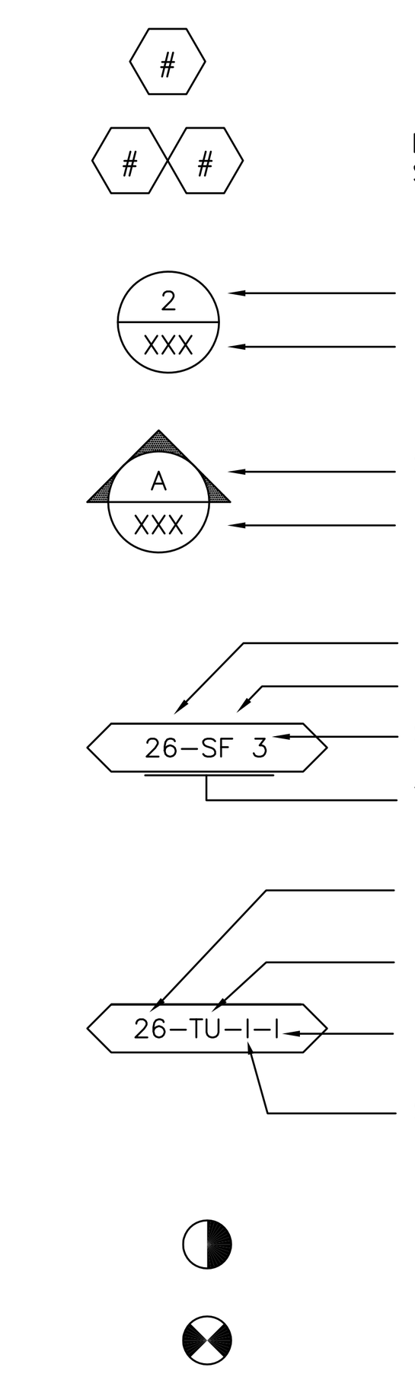
1. ALL PIPING MATERIALS AND COMPONENTS INCLUDING FITTINGS, PIPE, FLANGES, VALVES, ETC. SHALL BE DESIGNED, FABRICATED AND INSTALLED PER APPROPRIATE SECTIONS OF THE LATEST ANSI AND ASTM CODES AND STANDARDS AND THE MATERIAL SPECIFICATIONS FOUND IN THE PROJECT DOCUMENTS.
2. CONTRACTOR TO INSTALL HIGH POINT VENTS AT ALL SYSTEM HIGH POINTS AND LOW POINT DRAINS AT SYSTEM LOW POINTS. VENTS AND DRAINS ARE REQUIRED TO FACILITATE SYSTEM DRAINING AND VENTING DURING TESTING AND START-UP.
3. SURFACES TO BE SOLDERED SHALL BE CLEANED BRIGHT. THE JOINTS SHALL BE PROPERLY FLUXED AND MADE WITH APPROVED SOLDER. SOLDER JOINTS FOR POTABLE WATER SHALL BE MADE WITH A SOLDER CONTAINING NOT MORE THAN 0.2 PERCENT LEAD.
4. UNIONS SHALL BE INSTALLED AT ALL EQUIPMENT. THE USE OF DIELECTRIC UNIONS MUST BE INSTALLED IN AREAS WHERE JOINING OF DISSIMILAR METALS (ie CARBON STEEL TO COPPER OR BRONZE, ETC.). THIS IS TO FACILITATE PIPING REMOVAL AND REASSEMBLY FOR FUTURE MAINTENANCE WORK AND/OR PREVENT GALVANIC CORROSION.
5. CONTRACTOR SHALL PROPERLY BRACE, ANCHOR, AND SUPPORT ALL PIPING, VALVES ETC. UNLESS SHOWN OTHERWISE, ALL PIPE HANGERS AND SUPPORTS SHALL BE DESIGNED, MANUFACTURED AND INSTALLED PER MSS SP-58, MSS SP-69 AND MSS SP-89.
6. ALL ABOVEGROUND PIPING SHALL BE INSULATED AND JACKETED AS NOTED IN THE SPECIFICATIONS.
7. ALL PIPES THAT PASS THROUGH EXTERIOR WALLS SHALL BE SLEEVED AND MADE WEATHER TIGHT.
8. ALL PIPING AND VALVES MUST BE PROPERLY IDENTIFIED AND LABELED PER ANSI 13.1, ENTITLED "SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS". ALL VALVES MUST BE IDENTIFIED AND TAGGED WITH WEATHERPROOF TAGS.
9. ALL PIPES OR TUBING WHICH PASS THROUGH RATED AND NON-RATED WALLS, FLOORS AND FOUNDATION WALLS, SHALL PASS THROUGH A SCHEDULE 40 CARBON STEEL PIPE SLEEVE. SLEEVES WHICH PASS THROUGH MASONRY SHALL BE GALVANIZED COATED. ALL SLEEVES SHALL BE INSTALLED FLUSH ON BOTH SIDES OF WALL PENETRATION.

   NON-RATED WALL: THE SLEEVE SHALL BE SIZED TO ALLOW FREE PASSAGE OF INSULATED AND NON-INSULATED PIPES AND TUBING.

   RATED WALL: PIPES WHICH PASS THROUGH FIRE-RATED WALLS & FLOOR SHALL USE THE APPROPRIATE CODE APPROVED, TESTED AND INSTALLATION METHOD OF SEALING WHILE MAINTAINING THE INTEGRITY OF THE WALL'S FIRE RATING(S).

   EXTENSION WALLS & FOUNDATION WALLS: PIPES WHICH PASS THROUGH EXTENSION WALLS OR FOUNDATION WALLS SHALL BE SEALED AND MADE WEATHER TIGHT.
10. INSULATE COLD AND HOT WATER PIPING WITH FIRE RETARDANT VAPOR BARRIER JACKET. PIPE INSULATION SHALL BE SEALED WITH A FIRE RESISTIVE ADHESIVE. SEE SPECIFICATIONS.

DRAWING SYMBOLS



- KEY NOTE SYMBOL
- MULTIPLE KEY NOTES APPLYING TO THE SAME ITEM
- DETAIL NUMBER
- DRAWING NUMBER WHERE DRAWN
- SECTION LETTER
- DRAWING NUMBER WHERE SHOWN
- BUILDING NO. WHERE EQUIPMENT IS LOCATED.
- EQUIPMENT ABBREVIATION (SUPPLY FAN)
- SUPPLY FAN NO. 3 IN BUILDING NO. 26
- TYPICAL UNIT NO.
- BUILDING NO. WHERE EQUIPMENT IS LOCATED
- ITEM (TERMINAL UNIT SHOWN)
- ITEM NUMBER (TERMINAL UNIT NO. 1)
- SERVED BY AIR HANDLER UNIT NO. 1
- POINT OF DISCONNECTION
- POINT OF CONNECTION - NEW TO EXISTING

CONSTRUCTION BID DOCUMENTS
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NO.	DESCRIPTION	DATE

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Drawing Title: MECHANICAL SYMBOLS, ABBREVIATIONS AND LEGENDS

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: M.P. | Drawn: R.R.

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: M-001

Dwg. 16 of 47

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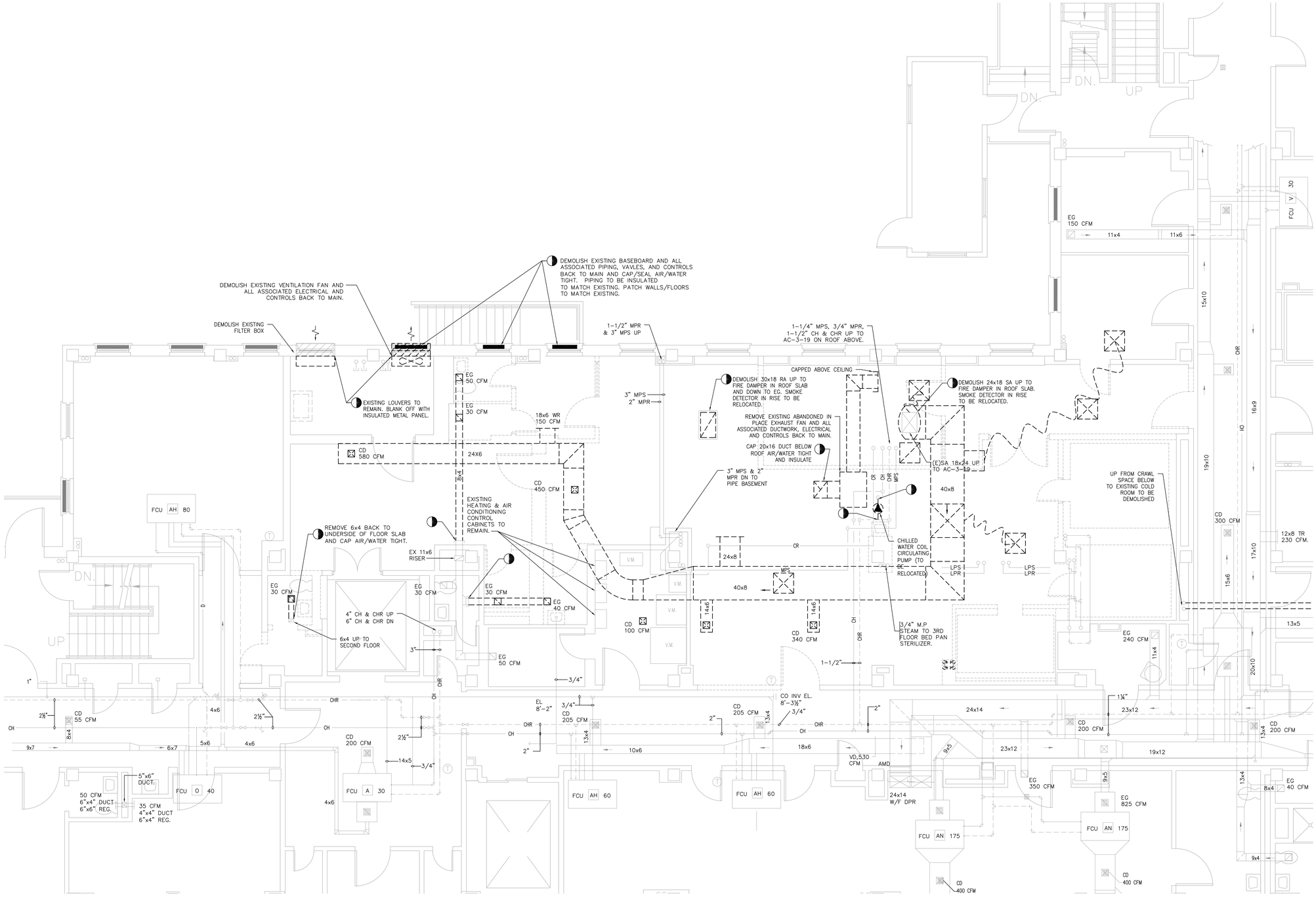

1 BLDG 19: FIRST FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
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Drawing Title: BLDG 19: FIRST FLOOR MECHANICAL DEMOLITION PLAN
Approved: Project Director
Project Title: LEBANON - EMERGENCY CACHE
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013
Checked: MP
Drawn: RR
Project Number: VA595-11-127
Building Number: BLDGS. 19 & 22
Drawing Number: 19-MD1.01
Dwg.17 of 47

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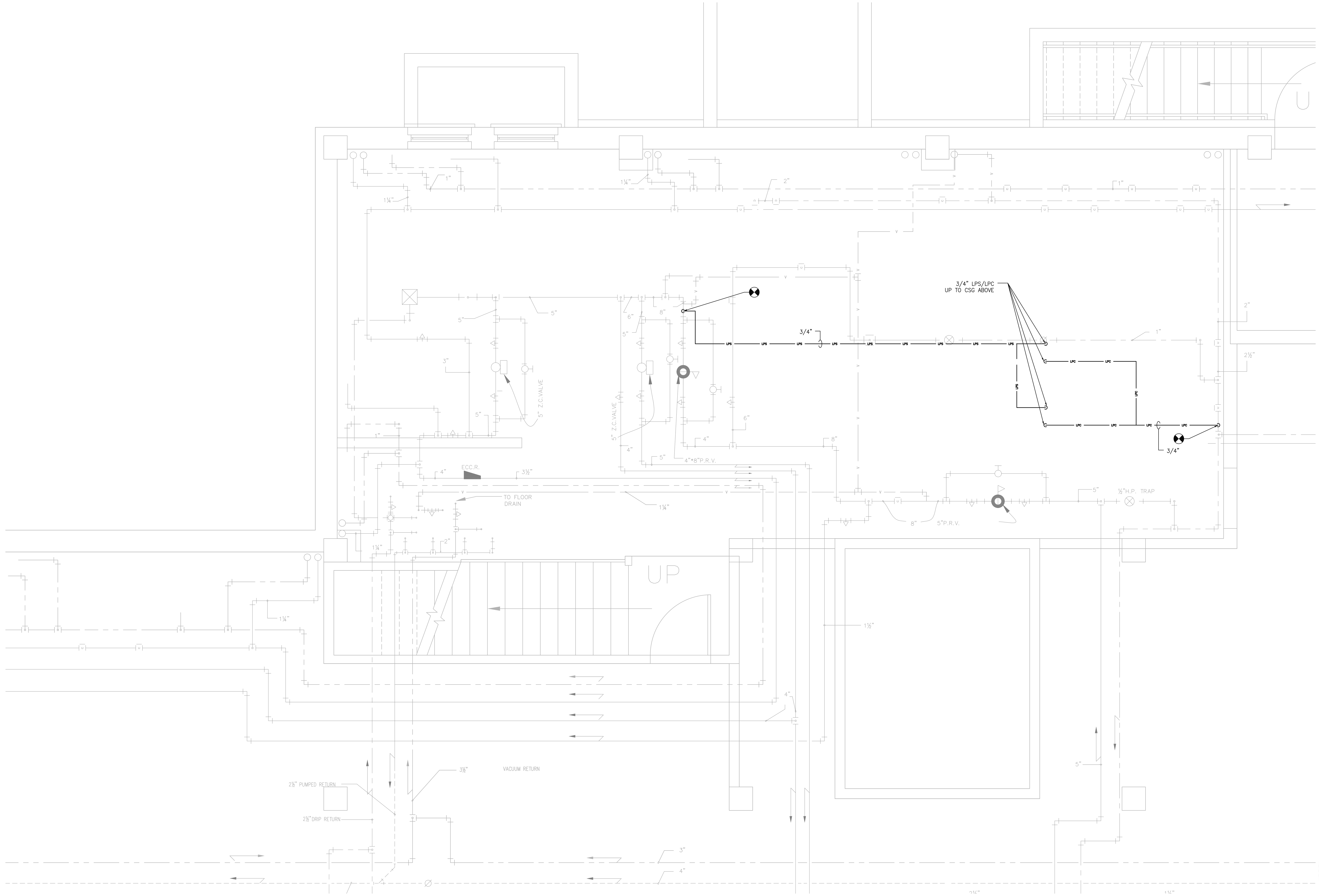
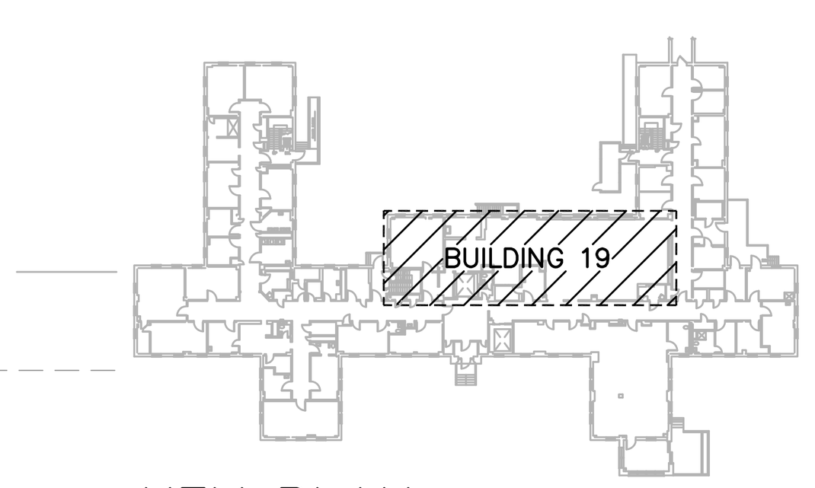


GENERAL SHEET NOTES:

1. SEE DRAWING M-001 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. FINAL PIPE ROUTING AND CONNECTION POINTS TO BE FIELD VERIFIED.

1 BLDG 19: BASEMENT MECHANICAL PIPING PLAN
SCALE: 1/2" = 1'-0"



KEY PLAN
NOT TO SCALE

PLAN NORTH
ACTUAL NORTH

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Drawing Title: BLDG 19: BASEMENT MECHANICAL PIPING PLAN

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 19-MP1.01

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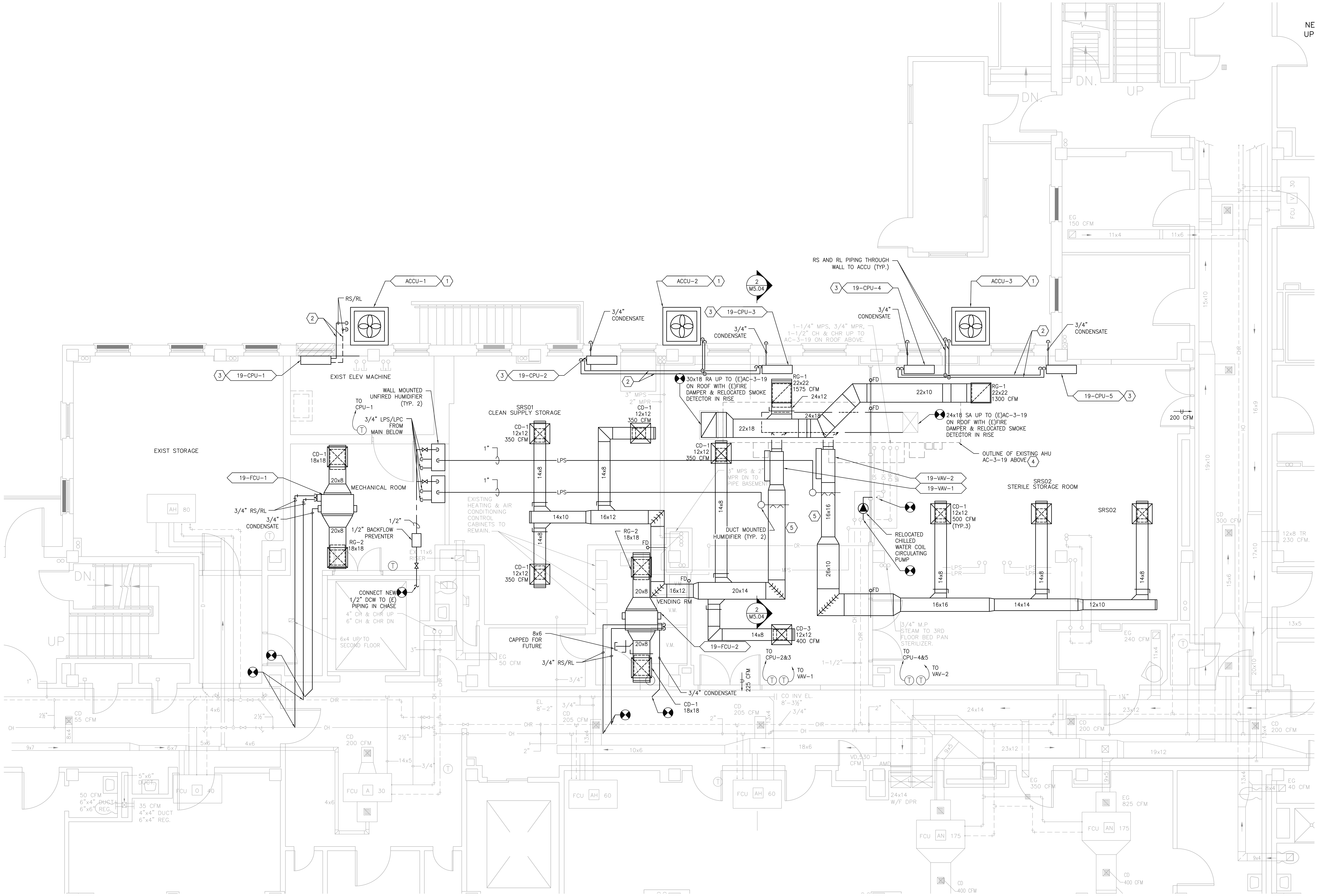


1 BLDG 19: FIRST FLOOR MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

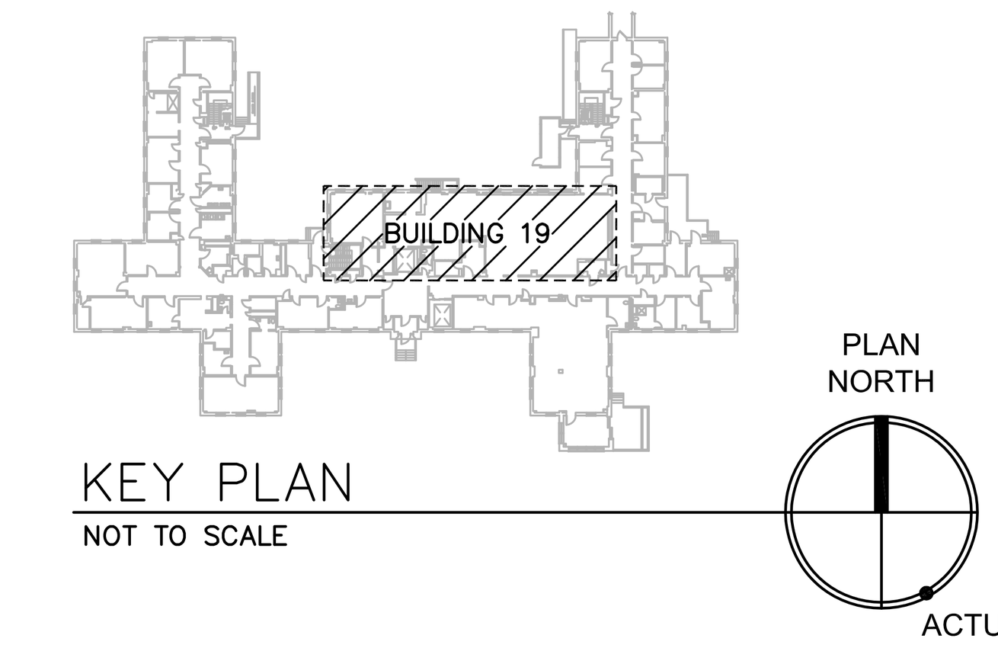
NE
UP

GENERAL SHEET NOTES:

1. SEE DRAWING M-001 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.

SHEET KEYNOTES:

1. UNIT DRAWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL UNIT TO BE BRACKETED TO WALL, 2'-0" OFF GROUND TO BOTTOM OF UNIT (TYPICAL). REFER TO MANUFACTURER DOCUMENTATION FOR ACTUAL SIZES.
2. RS/RL LINES SHOWN FOR ILLUSTRATION ONLY. LINES TO BE INSTALLED PER MANUFACTURER'S, REQUIREMENTS, RECOMMENDATIONS AND SPECIFICATIONS.
3. INDOOR UNITS TO BE WALL-MOUNTED TYPE.
4. FAN MOTORS IN (E)AC-3-19 ON FIRST FLOOR ROOF TO BE CHANGED FROM BELT DRIVE TO DIRECT DRIVE. AIRFLOW READINGS TO BE TAKEN PRIOR TO COMMENCEMENT OF WORK. AIRFLOWS TO BE BALANCED AFTER WORK IS COMPLETED TO QUANTITIES MEASURED PRIOR TO WORK COMMENCEMENT. ALL CONTROLS INPUTS, OUTPUTS, AND SETPOINTS TO BE ADJUSTED TO MAINTAIN EXISTING CONTROLS SCHEME.
5. PROVIDE STAINLESS STEEL DUCTWORK 3'-0" DOWNSTREAM OF HUMIDIFIER.



KEY PLAN
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Drawing Title	BLDG 19: FIRST FLOOR MECHANICAL PLAN
Approved: Project Director	
Project Title	LEBANON - EMERGENCY CACHE
Location	1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date	04-10-2013
Checked	MP
Drawn	RR
Project Number	VA595-11-127
Building Number	BLDGS. 19 & 22
Drawing Number	19-M1.01
Dwg.	19 of 47

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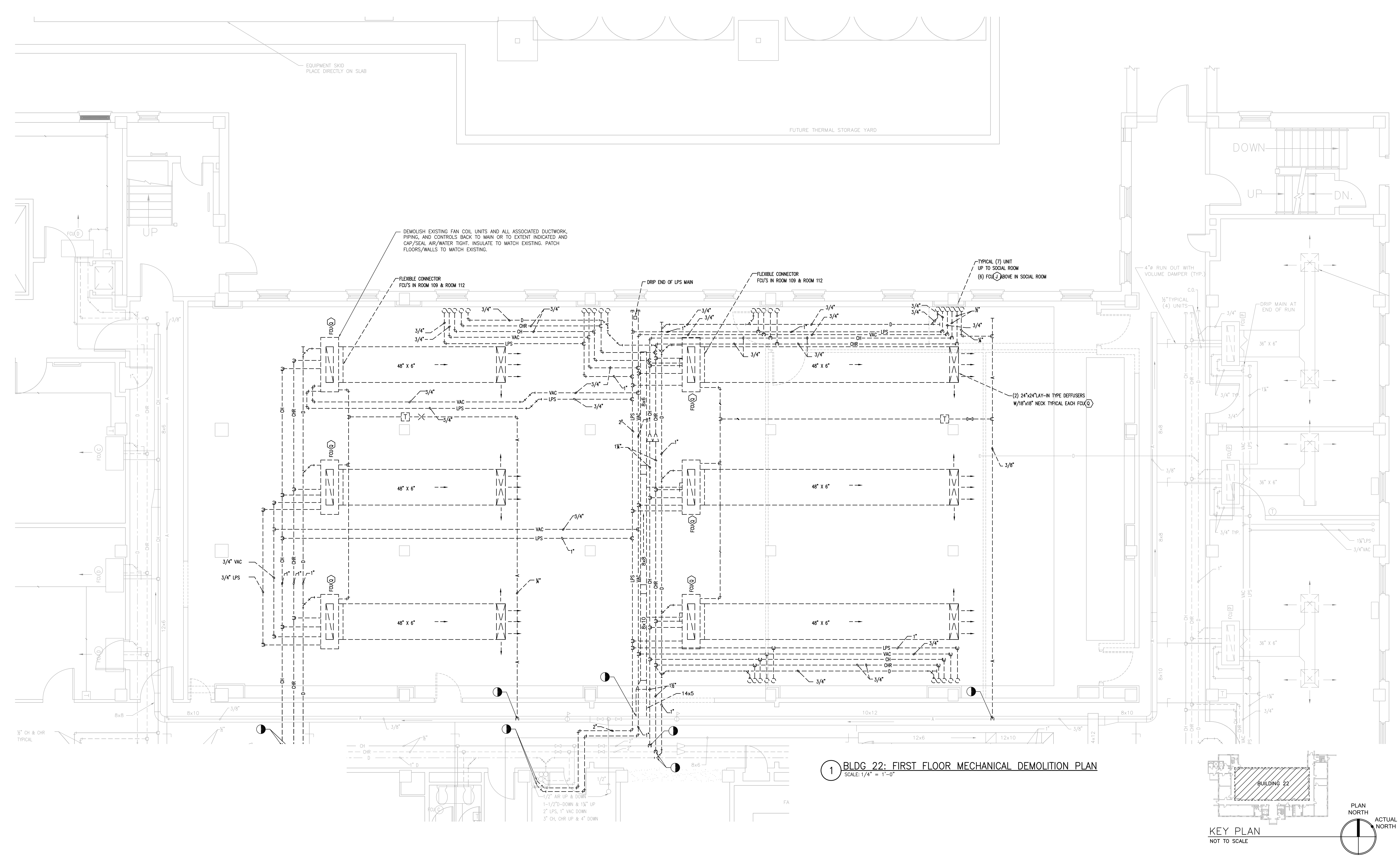

1 BLDG 22: FIRST FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

CONSTRUCTION BID DOCUMENTS
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Drawing Title: BLDG 22: FIRST FLOOR MECHANICAL DEMOLITION PLAN

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE, LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 22-MD1.01

Dwg. 20 of 47

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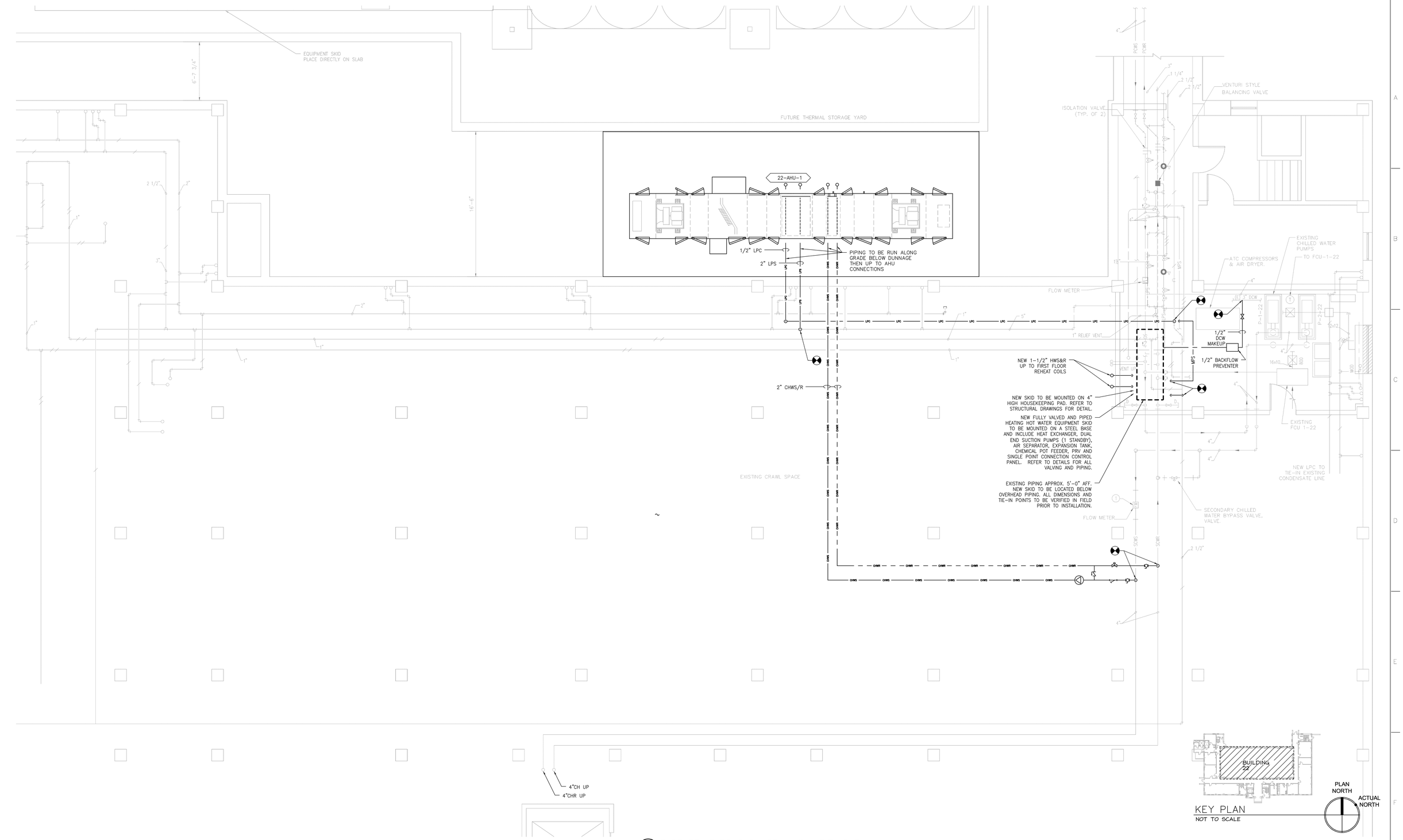

1 BLDG 22: BASEMENT MECHANICAL PIPING PLAN
SCALE: 1/4" = 1-0"

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Drawing Title: BLDG 22: BASEMENT MECHANICAL PIPING PLAN

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 22-MP1.01

Dwg. 21 of 47

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Department of Veterans Affairs

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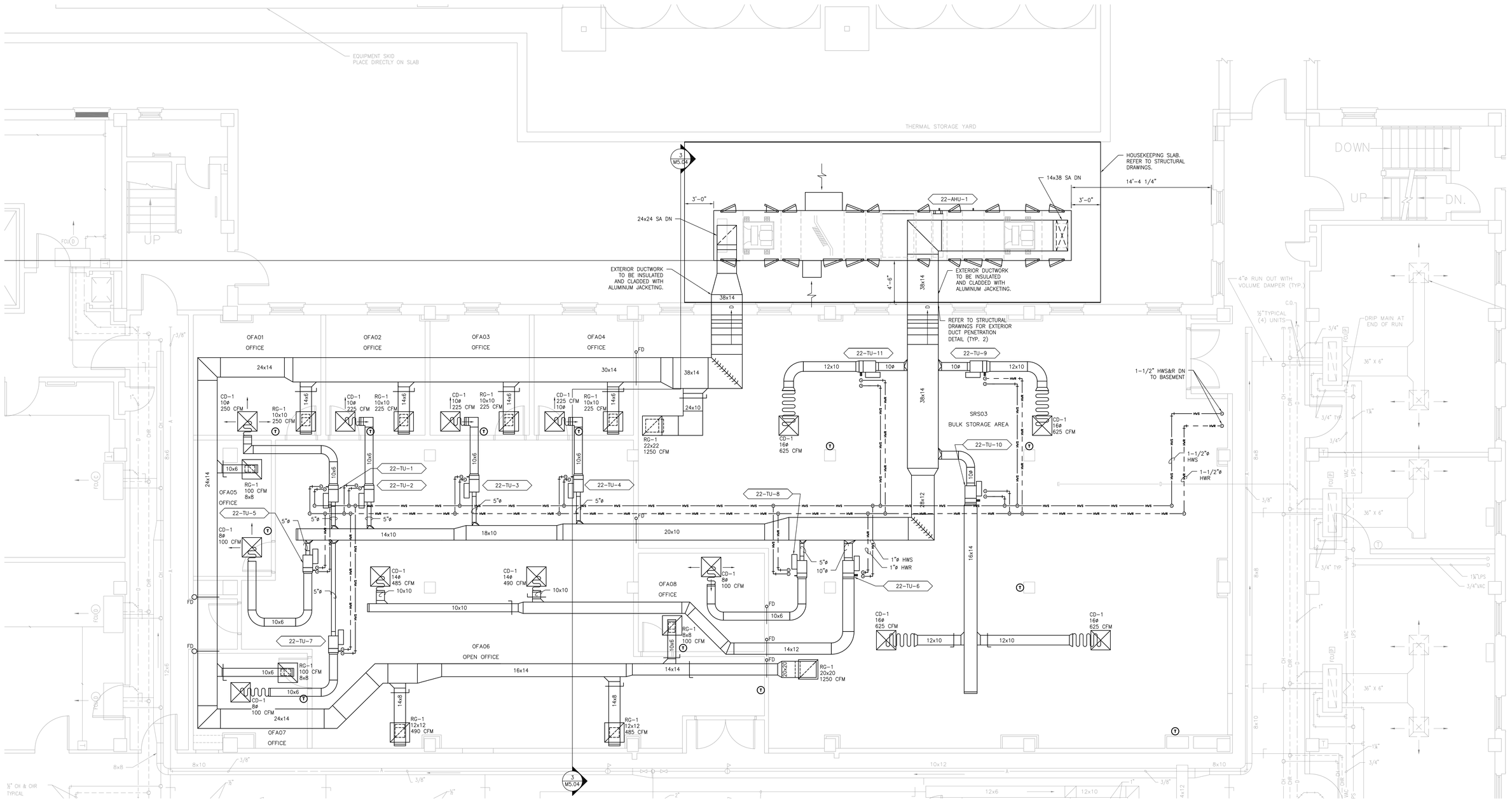
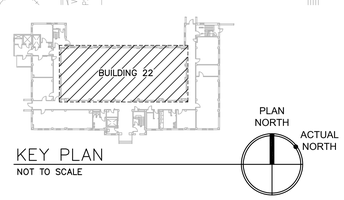


1 BLDG 22: FIRST FLOOR MECHANICAL PLAN
SCALE: 1/4" = 1'-0"



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Drawing Title: BLDG 22: FIRST FLOOR MECHANICAL PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RMV

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 22-M1.01

Dwg. 22 of 47

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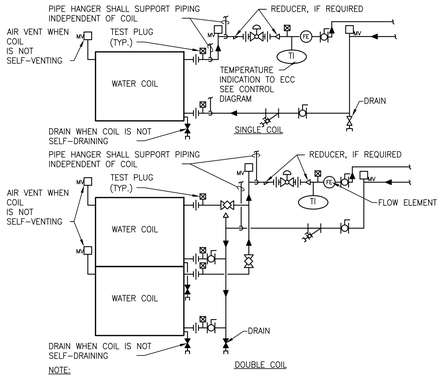
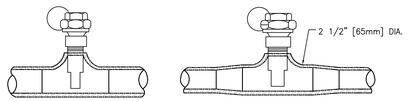


NOTE:

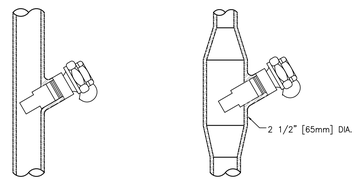
1. WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATORS THE FIRST 2 HANGERS FOR EACH PIPE SHALL BE SPRING & NEOPRENE TYPE. TYPE "H" FOR 4" [100mm]ø PIPE & SMALLER. TYPE "H-P" FOR 5" [125mm]ø PIPE & LARGER.
2. PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALES, OR EQUIPMENT.
3. THE FLOW ELEMENT MAY BE INSTALLED IN THE SUPPLY PIPING IF THE REQUIRED MINIMUM UPSTREAM AND DOWNSTREAM DIMENSIONS CANNOT BE OBTAINED IN THE RETURN PIPING.

1 WATER COILS - PIPING CONNECTIONS

NTS



HORIZONTAL



VERTICAL

5 INSTALLATION OF THERMOMETER WELLS

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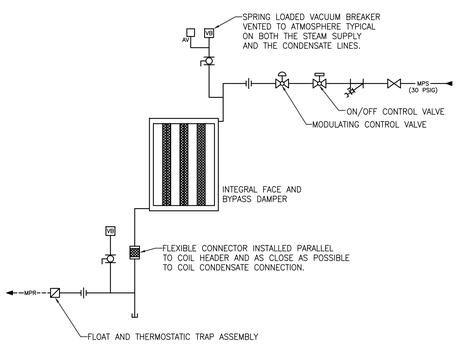
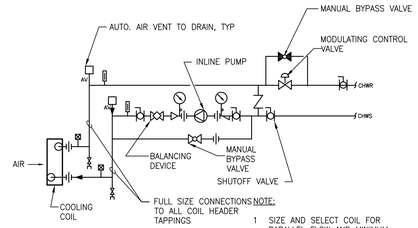


9 INTEGRAL FACE AND BYPASS STEAM COIL DETAIL

NTS



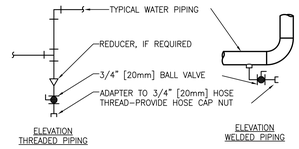
NOTE:

1 SIZE AND SELECT COIL FOR PARALLEL FLOW AND MINIMUM TUBE WATER VELOCITY OF 3.0 FEET PER SECOND

2 COOLING COIL WITH FREEZE PROTECTION PUMP

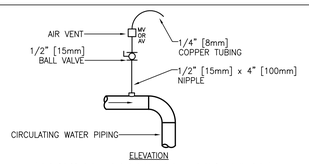
NTS

DESIGNERS NOTE:
1.COORDINATE WITH HVAC DESIGN MANUAL.



TYPICAL CHILLED AND HOT WATER PIPING DRAIN VALVE CONNECTIONS

NOTES:
1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

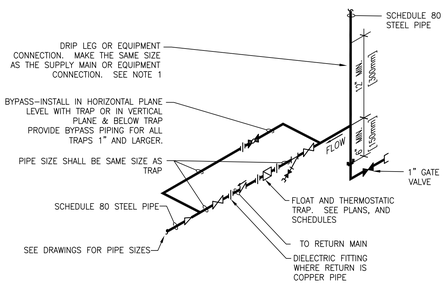


TYPICAL MANUAL AIR VENT

NOTES:
1. VENT ALL HIGH POINTS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO DRAIN.

6 DRAIN VALVE AND AIR VENT CONNECTIONS (HYDRONIC SYSTEMS)

NTS

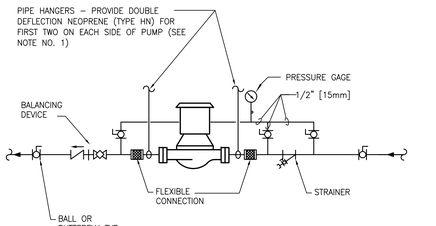


NOTE:

1. ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A 12" MINIMUM HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE POCKET BELOW TRAP INLET.

10 FLOAT AND THERMOSTATIC STEAM TRAP ASSEMBLY

NTS

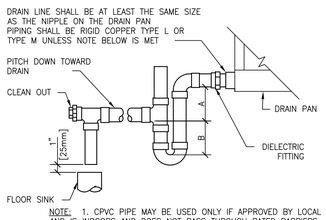


NOTES:

1. SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

3 IN-LINE PUMPS - CONNECTIONS

NTS



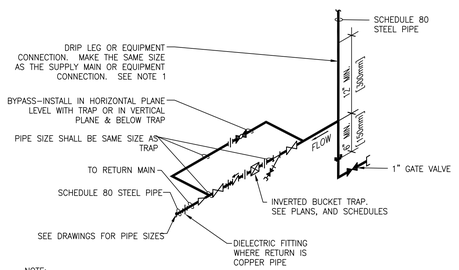
NOTE: 1. CPVC PIPE MAY BE USED ONLY IF APPROVED BY LOCAL VA AND IS INDOORS AND DOES NOT PASS THROUGH RATED BARRIERS.
2. DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.

UNIT TYPE	A	B
DRAW THRU	2" [50mm] PLUS X	X
BLOW THRU	1" [25mm] MINIMUM	2X

WHERE X = STATIC PRESSURE IN PAN

7 AIR HANDLING UNIT DRAIN TRAP DETAIL

NTS

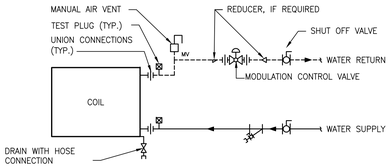


NOTE:

1. ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A 12" MINIMUM HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE POCKET BELOW TRAP INLET.
2. PROVIDE BYPASS PIPING.

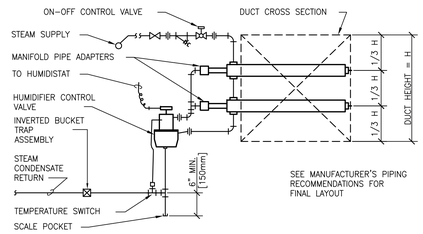
11 INVERTED BUCKET STEAM TRAP ASSEMBLY

NTS



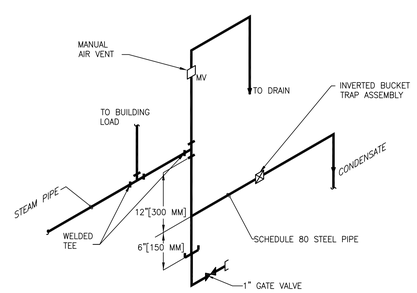
4 TERMINAL UNIT WATER COILS - PIPING CONNECTIONS

NTS



8 STEAM HUMIDIFIER - PIPING CONNECTIONS (MULTIPLE DISPERSION TUBES)

NTS



12 END OF STEAM LINE DRIP TRAP

NTS

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

SPIEZLE ARCHITECTURAL GROUP, INC.
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Fax 609.394.2274

MILLER-REMICK LLC
PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA — REGISTERED — ENGINEER — No. — DATE OF EXPIRATION

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business

1010 KINGS HIGHWAY SOUTH
BUILDING ONE - 1st FLOOR
CHERRY HILL, NEW JERSEY
08034 PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title: MECHANICAL DETAILS

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **M5.01**

Dwg. **23** of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

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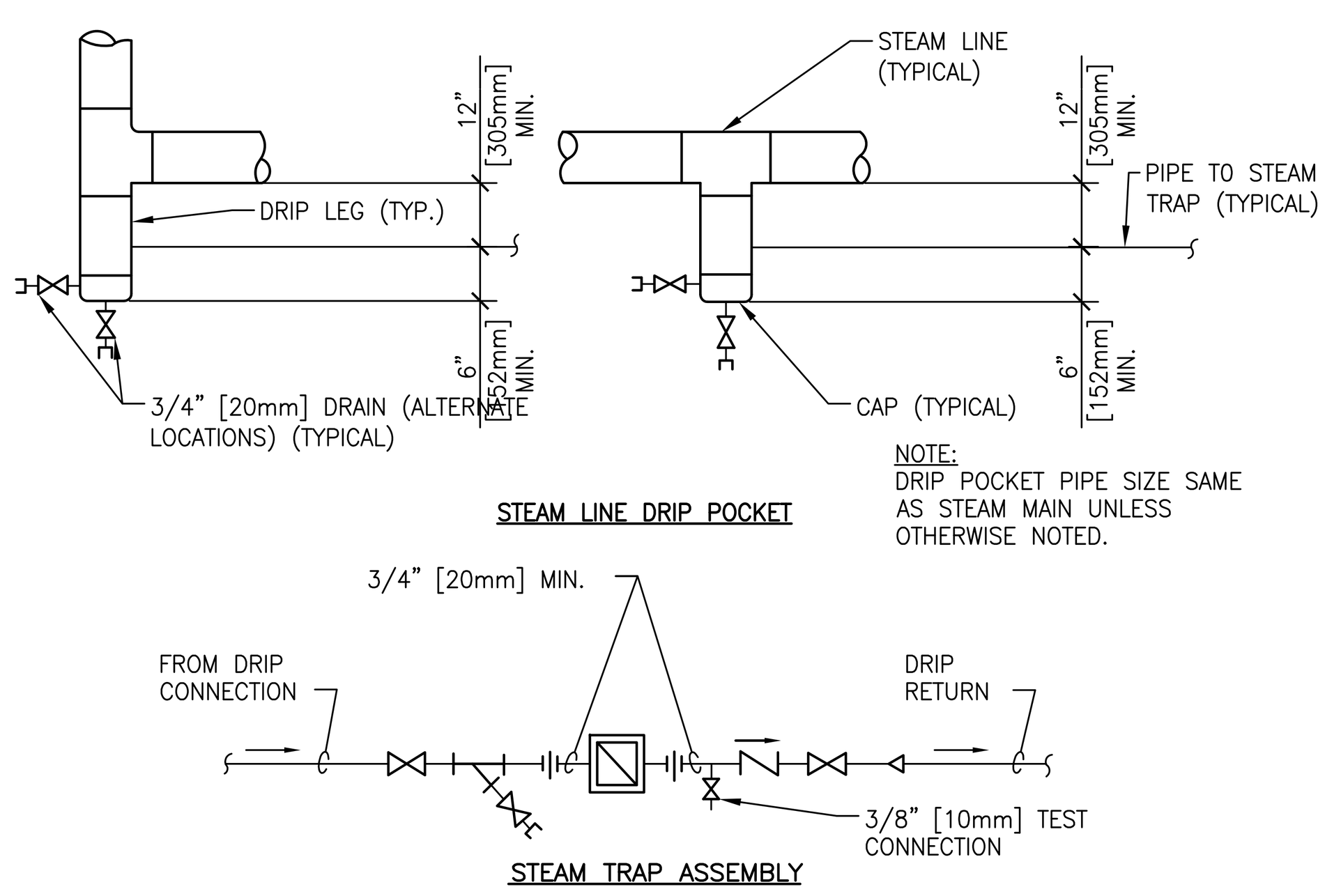
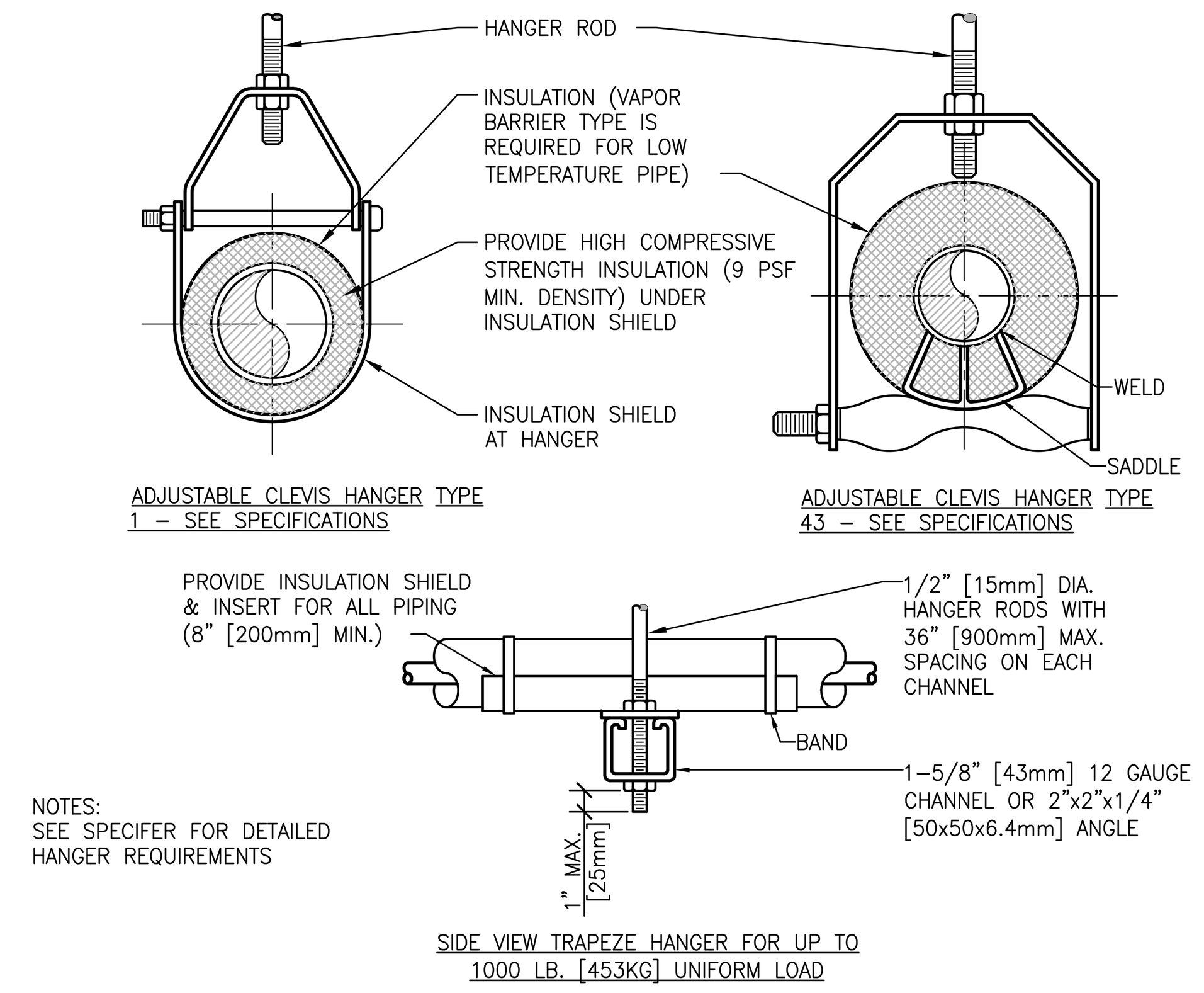


1 STEAM LINE DRIP POCKET STEAM TRAP ASSEMBLY

NTS



NOTES:
SEE SPECIFER FOR DETAILED HANGER REQUIREMENTS

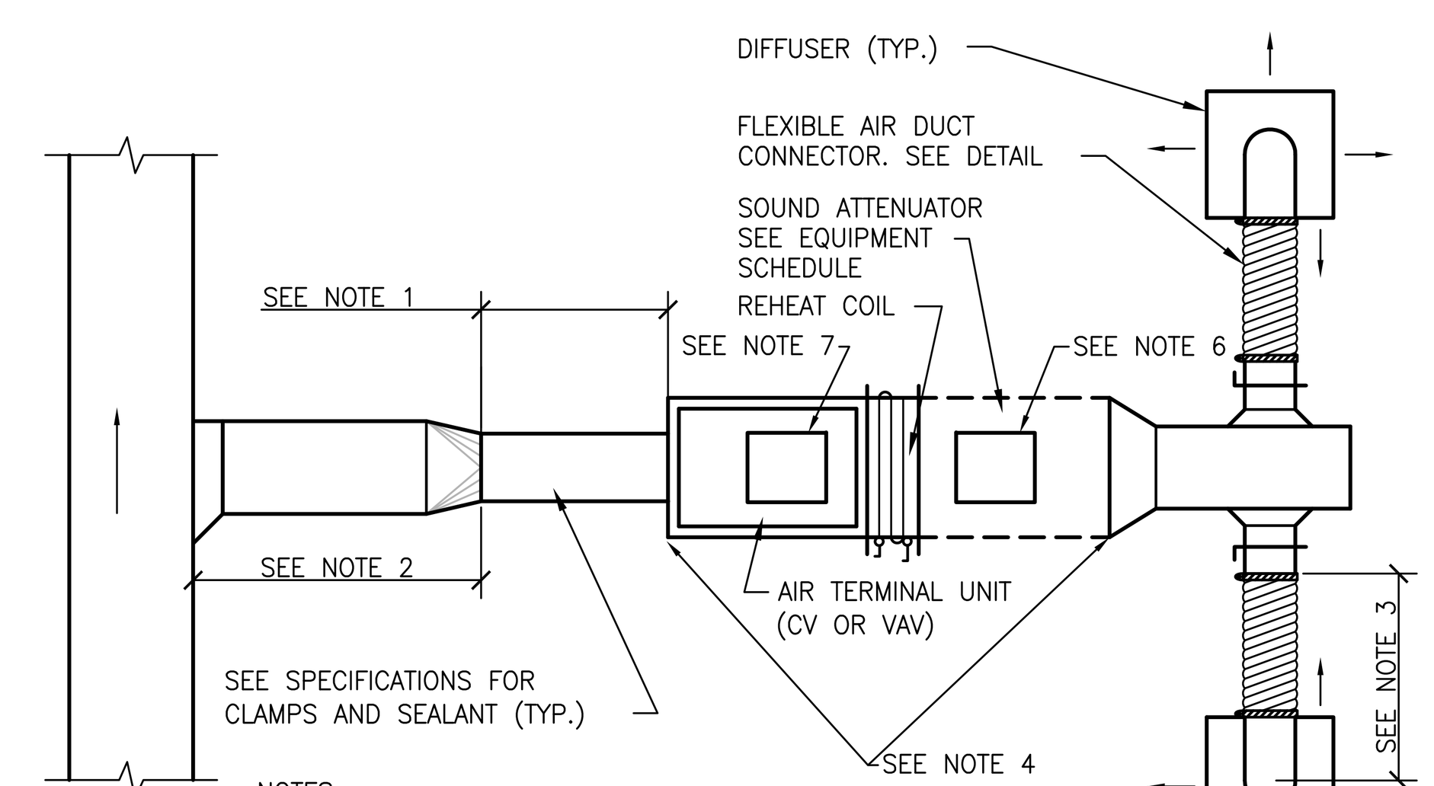
MAXIMUM PIPE/TUBING SUPPORT SPACING

NOM. SIZE	IN. [mm]	THRU 3/4 THRU [20]	1 [25]	1 1/4 [32]	1 1/2 [40]	2 [50]	2 1/2 [65]	3 [75]	4 [100]	5 [125]	6 [150]	8 [200]	10 [250]	12 [300]	14 [350]	16 [400]	18 [450]	20 [500]	24 [600]
PIPE	FT. [mm]	7 [2100]	7 [2100]	7 [2100]	9 [2700]	10 [3000]	11 [3400]	12 [3700]	14 [4100]	16 [4900]	17 [5200]	19 [5800]	22 [6700]	23 [7000]	25 [7600]	27 [8200]	28 [8500]	30 [9100]	32 [9600]
TUBING	FT. [mm]	5 FT [1500]	6 [1800]	7 [2100]	8 [2400]	8 [2400]	9 [2700]	10 [3000]	12 [3700]	13 [4000]	14 [4100]	16 [4900]	–	–	–	–	–	–	–

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

2 PIPE HANGERS

NTS

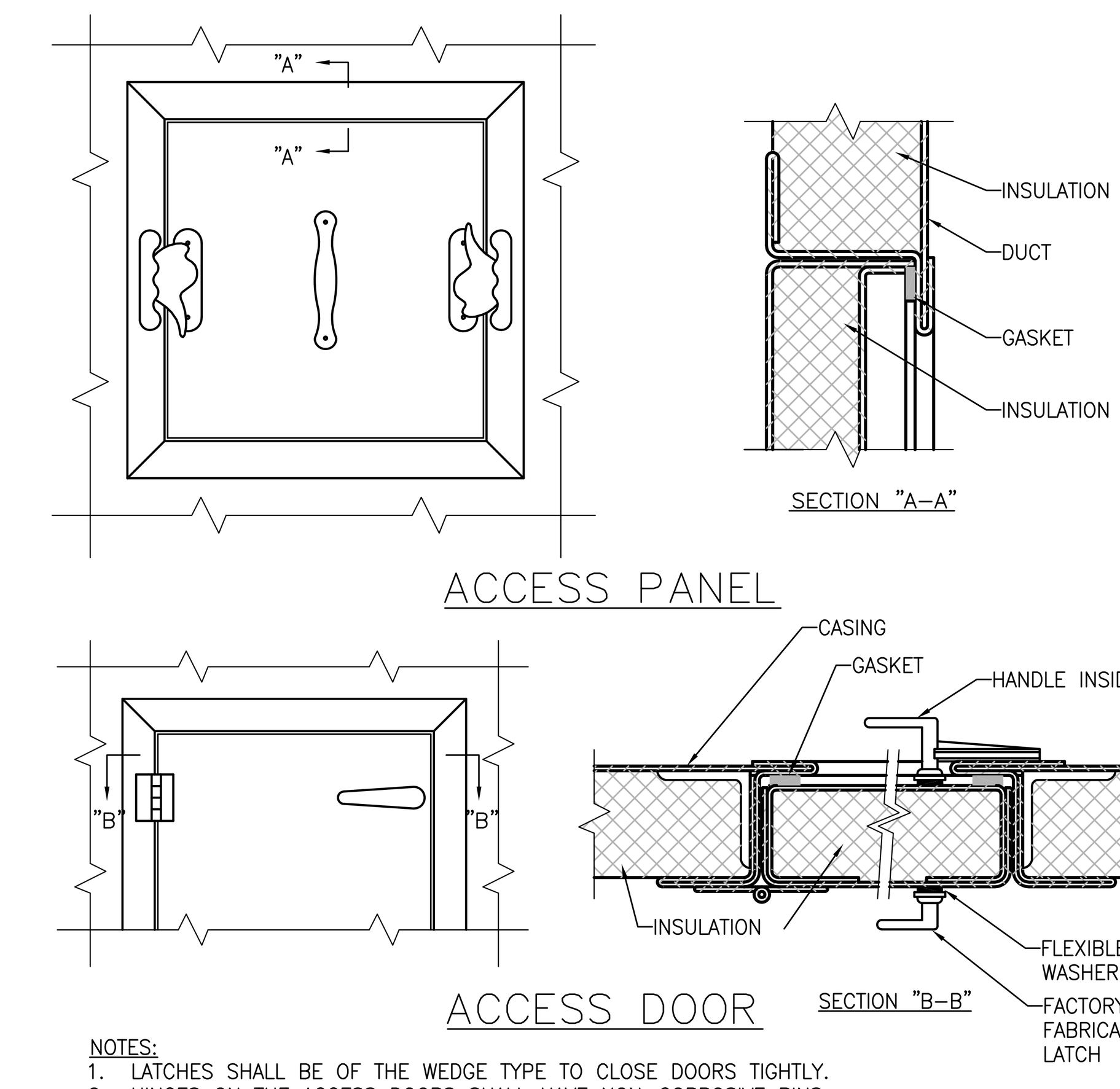


NOTES:

1. RIGID STRAIGHT TERMINAL UNIT INLET LENGTH SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET
2. FOR LONGER LENGTHS, INCREASE THE DUCT SIZE AND PROVIDE A DUCT TRANSITION TO MAINTAIN THE DUCT STATIC PRESSURE DROP AT OR BELOW 0.08"/100' [1.64Pa/m].
3. FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0". USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
4. COMPONENT ARRANGEMENT MAY VARY BY MANUFACTURER. PROVIDE INSULATION W/VAPOR BARRIER FOR CONNECTING DUCT SECTIONS.
5. USE OF THE FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR THE DEDICATED AHU SERVING THE SURGICAL SUITE.
6. PROVIDE DUCT MOUNTED ACCESS PANEL DOWNSTREAM OF REHEAT COIL.
7. PROVIDE VAV BOX WITH MANUFACTURER'S ACCES PANEL UPSTREAM OF REHEAT COIL

3 DUCT CONNECTIONS - AIR TERMINAL UNITS

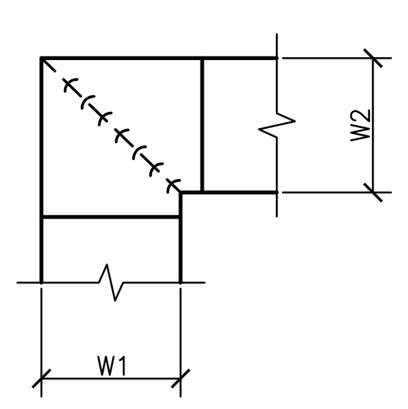
NTS



NOTES:
1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. SEE SMACNA 2005, FIGURE 9-15

4 ACCESS PANEL AND DOOR DETAIL

NTS

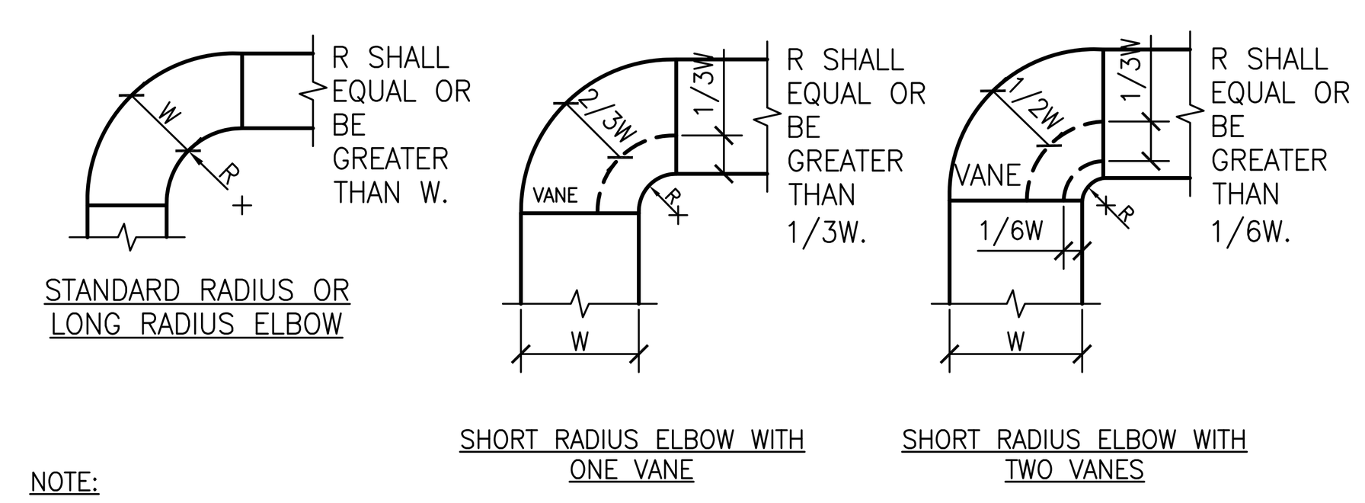


NOTE:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" [50mm] RADIUS, 1 1/2" [40mm] MAXIMUM SPACE BETWEEN VANES AND A 3/4" [20mm] TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" [500mm] VANES SHALL BE DOUBLE VANE TYPE.

5 DUCTWORK SQUARE VANE ELBOWS

NTS

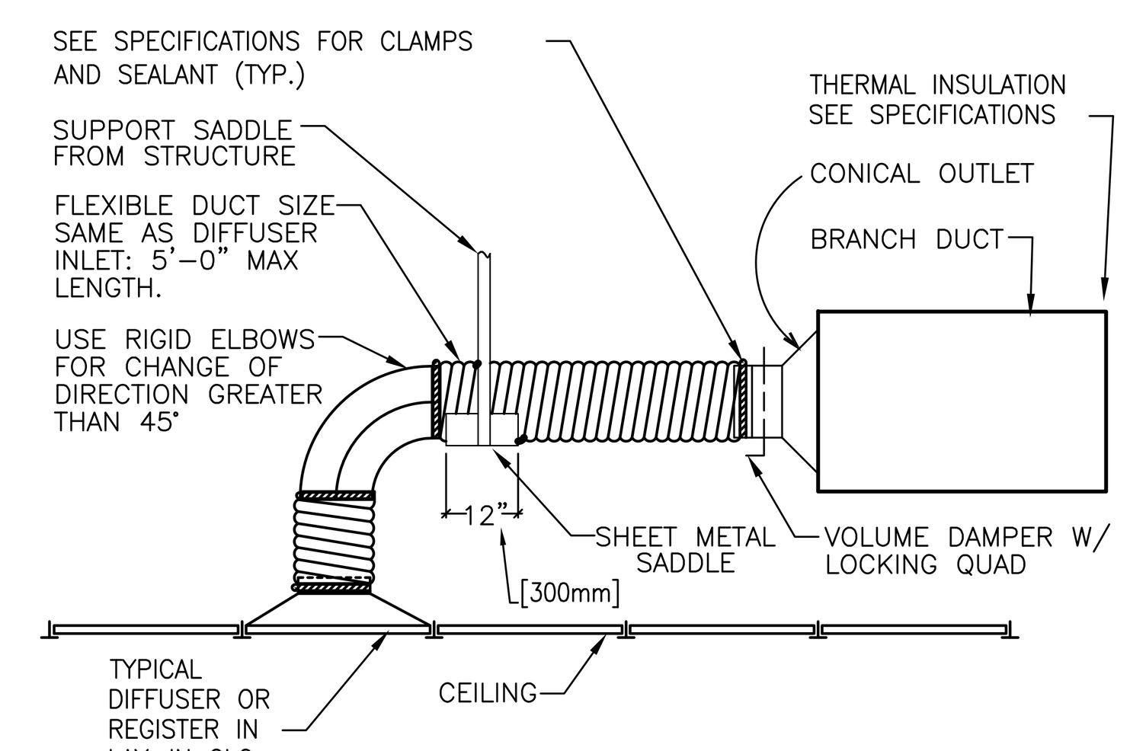


NOTE:

1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

6 DUCTWORK RADIUS ELBOWS

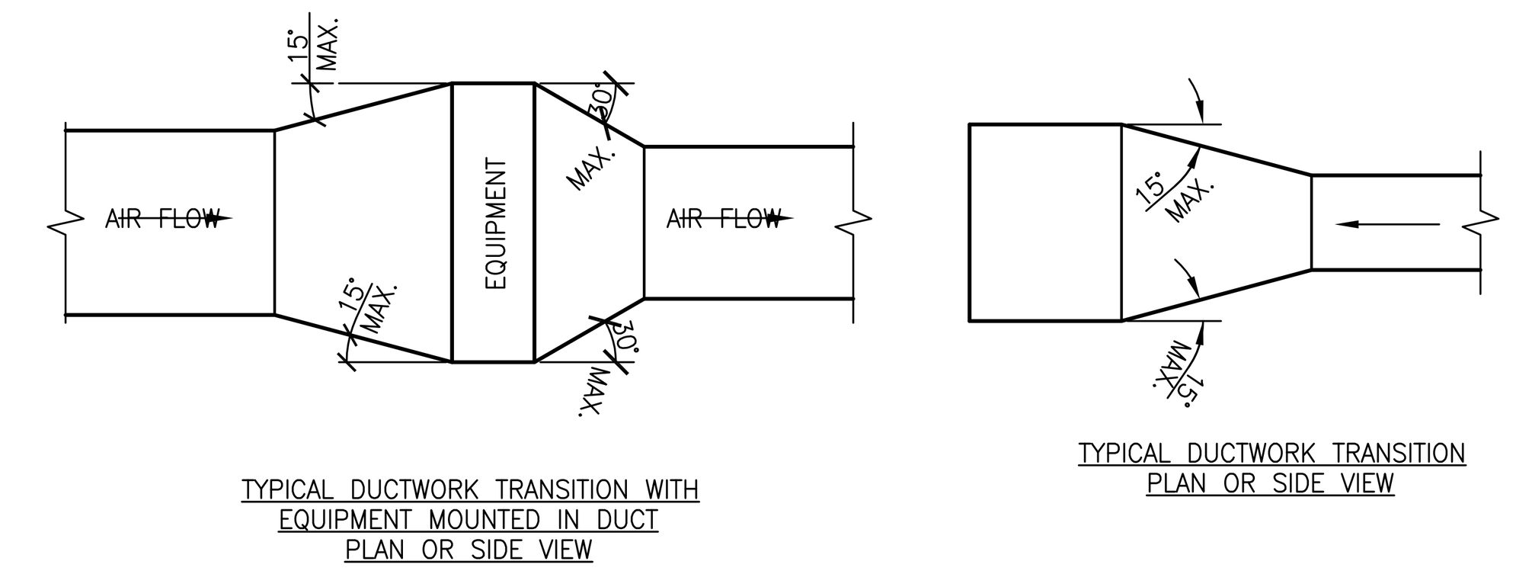
NTS



NOTE:
THE USE OF FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR THE DEDICATED AHU SERVING THE SURGICAL SUITE.

7 FLEXIBLE AIR DUCT CONNECTOR

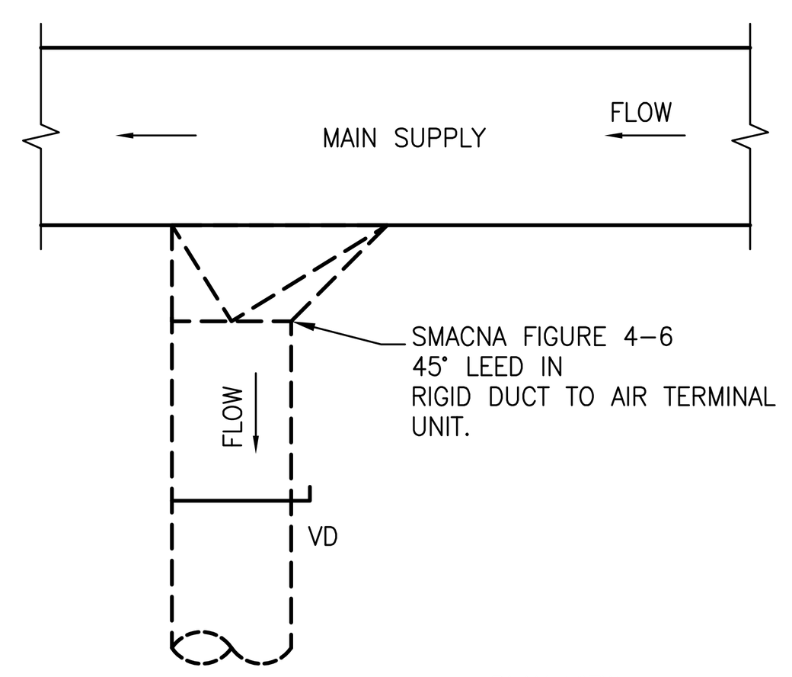
NTS



NOTE:
UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

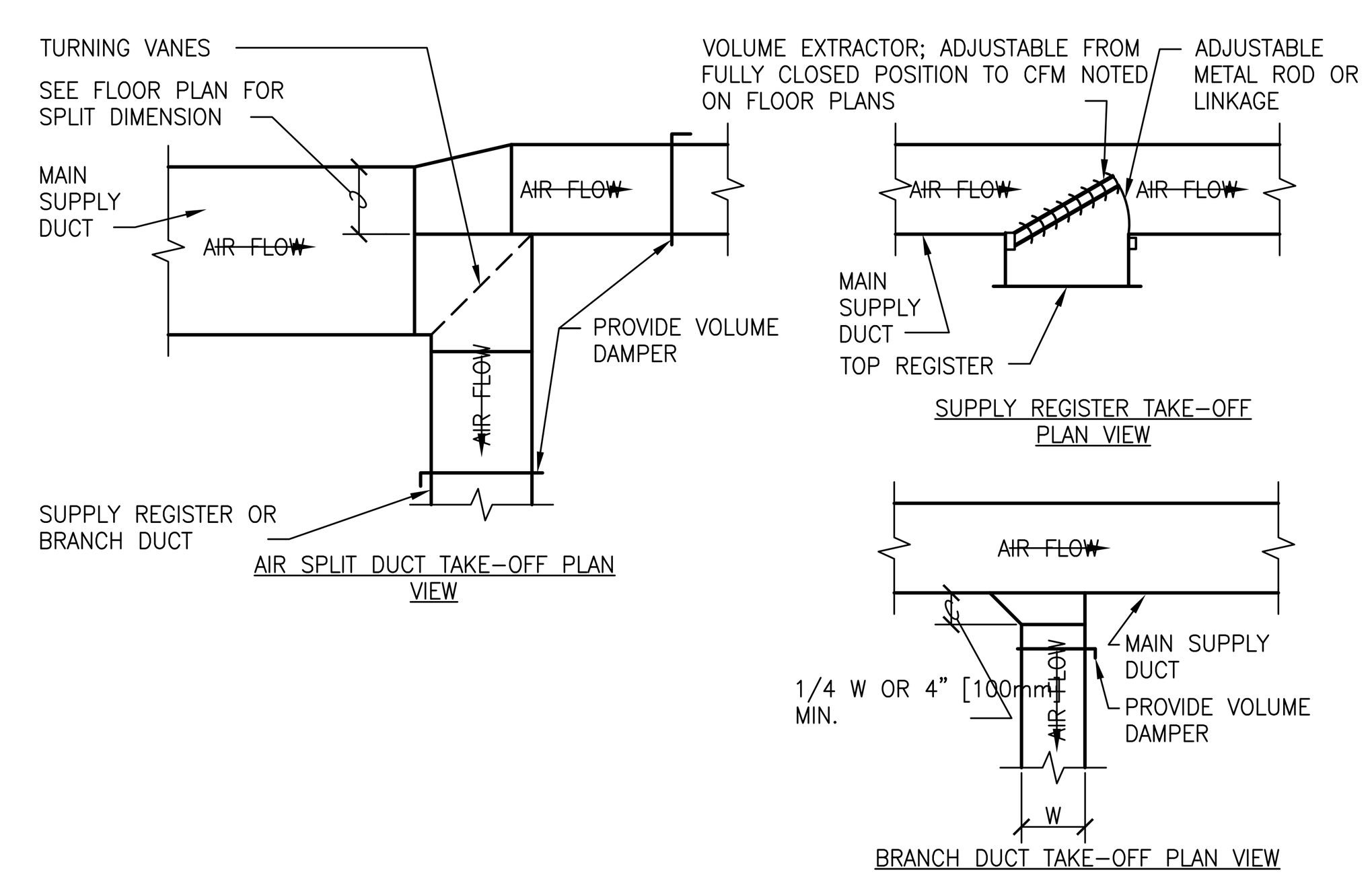
8 DUCTWORK TRANSITIONS (WITH EQUIPMENT MOUNTED IN DUCT)

NTS



9 SUPPLY DUCT TAKEOFF - AIR TERMINAL UNITS

NTS

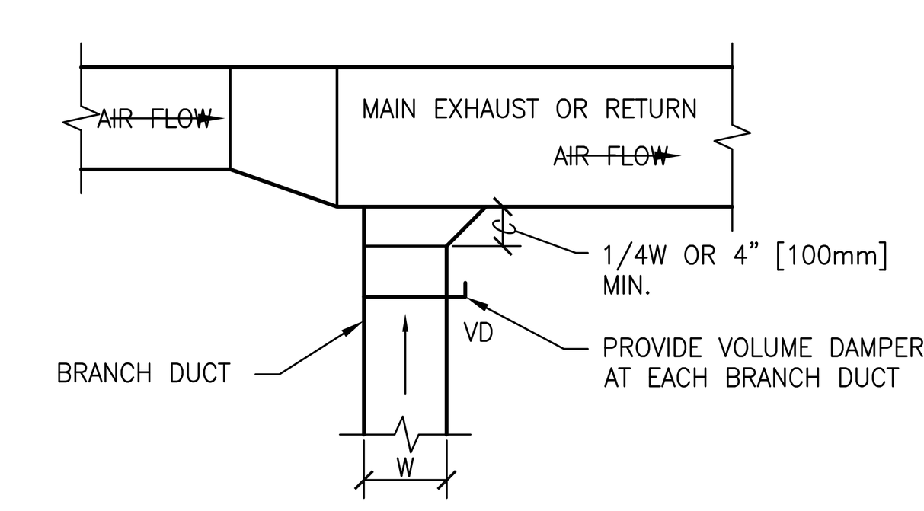


10 SUPPLY DUCTWORK TAKE-OFFS

NTS

DESIGNER'S NOTES:

1. THE SUPPLY REGISTER TAKE-OFF MAY BE USED FOR UP UP TO 25% OF THE MAIN DUCT CFM. THE BRANCH DUCT TAKE-OFF MAY BE USED FOR UP TO 15% OF THE MAIN DUCT CFM ANYTIME AND UP TO 40% WHEN THE MAIN DUCT VELOCITY IS 1000 FPM [5.1 M/S] OR LESS. THE AIR SPLIT DUCT TAKE-OFF SHALL BE USED IN ALL OTHER CASES AND MAY BE USED AT ANYTIME.
2. SHOW ALL VOLUME DAMPERS ON FLOOR PLANS.



11 EXHAUST OR RETURN BRANCH DUCTWORK

NTS

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

SPIEZLE ARCHITECTURAL GROUP, INC.
Architecture Planning Design
120 Sanhican Drive
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MILLER-REMICK LLC
PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
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Drawing Title: MECHANICAL DETAILS

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: M5.02

Dwg. 24 of 47

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Department of Veterans Affairs

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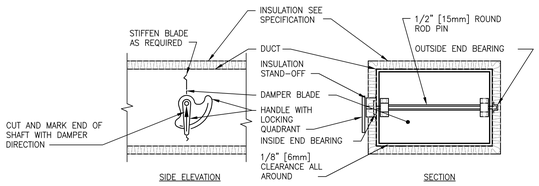
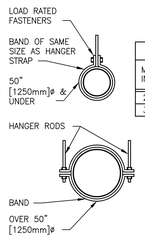


NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

1 VOLUME DAMPER DETAIL

NTS

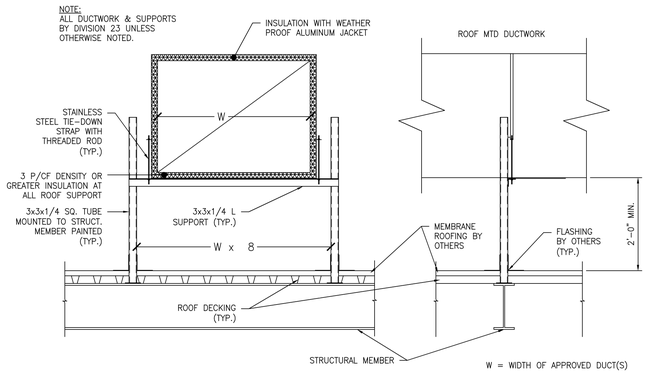


HANGER STRAPS OR RODS			
MAX. DUCT ø IN. [mm]	QUANTITY/SIZE IN. [mm]	MAX. LOAD LBS. [kg]	MAX. SPACING IN. [mm]
26 [650]	ONE 1 [25] x 22 GA STRAP	260 [119]	144 [3600]
36 [900]	ONE 1 [25] x 18 GA STRAP	420 [190]	144 [3600]

NOTE:
TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

2 ROUND DUCT HANGERS

NTS



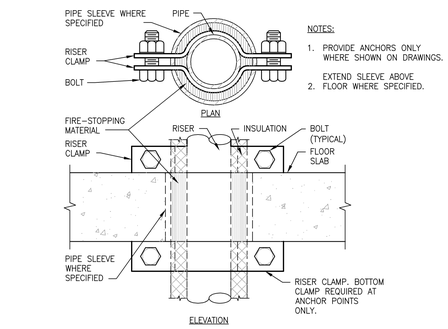
W = WIDTH OF APPROVED DUCT(S)

FOR MULTIPLE DUCTS SUPPORT WIDTH =

W x 11 (2 DUCTS)
W x 14 (3 DUCTS)

3 DUCT SUPPORT DETAIL

NTS

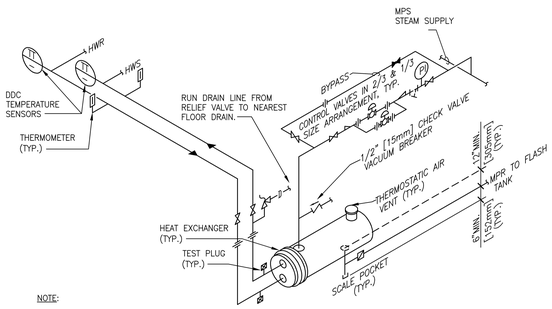


NOTES:

1. PROVIDE ANCHORS ONLY WHERE SHOWN ON DRAWINGS.
   EXTEND SLEEVE ABOVE
2. FLOOR WHERE SPECIFIED.

4 SUPPORT/ANCHOR FOR PIPE RISERS

NTS

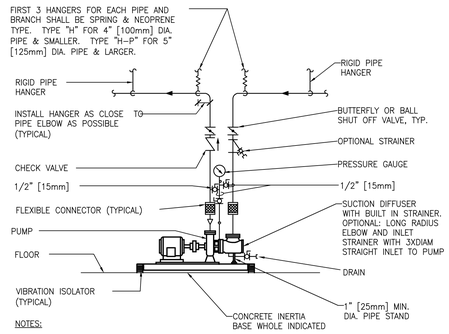


NOTE:

1. PROVIDE SADDLE SUPPORTS AND LEGS OR HANGERS FOR HEAT EXCHANGER. MOUNTING HEIGHT SHALL BE ADJUSTED TO FACILITATE GRAVITY RETURN OF STEAM CONDENSATE.
2. MAKE THE BYPASS THE SAME SIZE AS THE CONNECTIONS TO THE CONTROL VALVES.
3. CONTROL VALVES SHALL BE IN A $\frac{1}{3}$ AND $\frac{2}{3}$ SIZE ARRANGEMENT.
4. HEAT EXCHANGER TO BE PROVIDED AS PART OF BUILDING 22 HEATING HOT WATER EQUIPMENT SKID.

5 HEAT EXCHANGER - STEAM TO HOT WATER

NTS

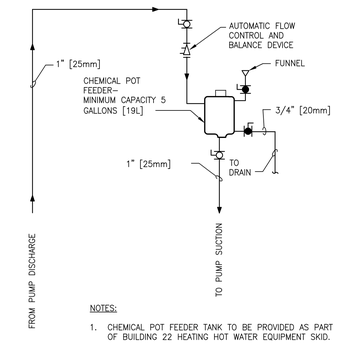


NOTES:

1. SEE SPECIFICATION SECTION "PUMPS" FOR Y STRAINER OPTION
2. PUMP TO BE PROVIDED AS PART OF BUILDING 22 HEATING HOT WATER EQUIPMENT SKID.

6 SINGLE SUCTION FLOOR-MOUNTED PUMPS - CONNECTIONS WITH FLEXIBLE CONNECTORS

NTS

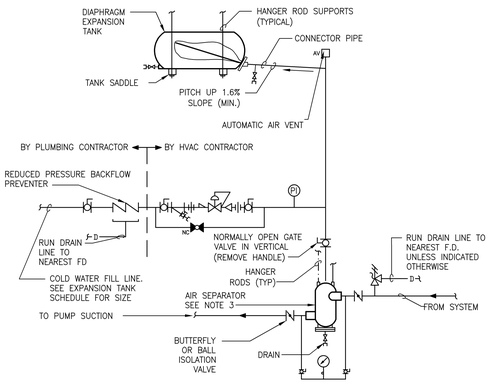


NOTES:

1. CHEMICAL POT FEEDER TANK TO BE PROVIDED AS PART OF BUILDING 22 HEATING HOT WATER EQUIPMENT SKID.

7 WATER TREATMENT - CLOSED SYSTEMS

NTS



NOTES:

1. SEE EXPANSION TANK SYSTEM SCHEDULE FOR COMPONENT SIZES.
2. RELIEF VALVE FOR CHILLED WATER SYSTEM IS SHOWN. OMIT WHEN RELIEF VALVE IS SHOWN ON HEAT EXCHANGER DETAIL & SYSTEM IS USED ONLY FOR HOT WATER HEATING.
3. PROVIDE STRAINER IN AIR SEPARATOR WHEN INDICATED IN EXPANSION TANK SCHEDULE.
4. SET PRESSURE REDUCING VALVE SO PRESSURE AT HIGHEST POINT IN SYSTEM HAS A MINIMUM OF 4 PSIG. [28kPa]
5. EXPANSION TANK AND AIR SEPARATOR TO BE PROVIDED AS PART OF BUILDING 22 HEATING HOT WATER EQUIPMENT SKID.

8 HORIZONTAL EXPANSION TANK - PIPING CONNECTIONS

NTS

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Architecture Planning Design
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MILLER-REMICK LLC
PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA REGISTERED ENGINEER NO. PE034043-E

ARCHITECT/ENGINEERS:

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Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

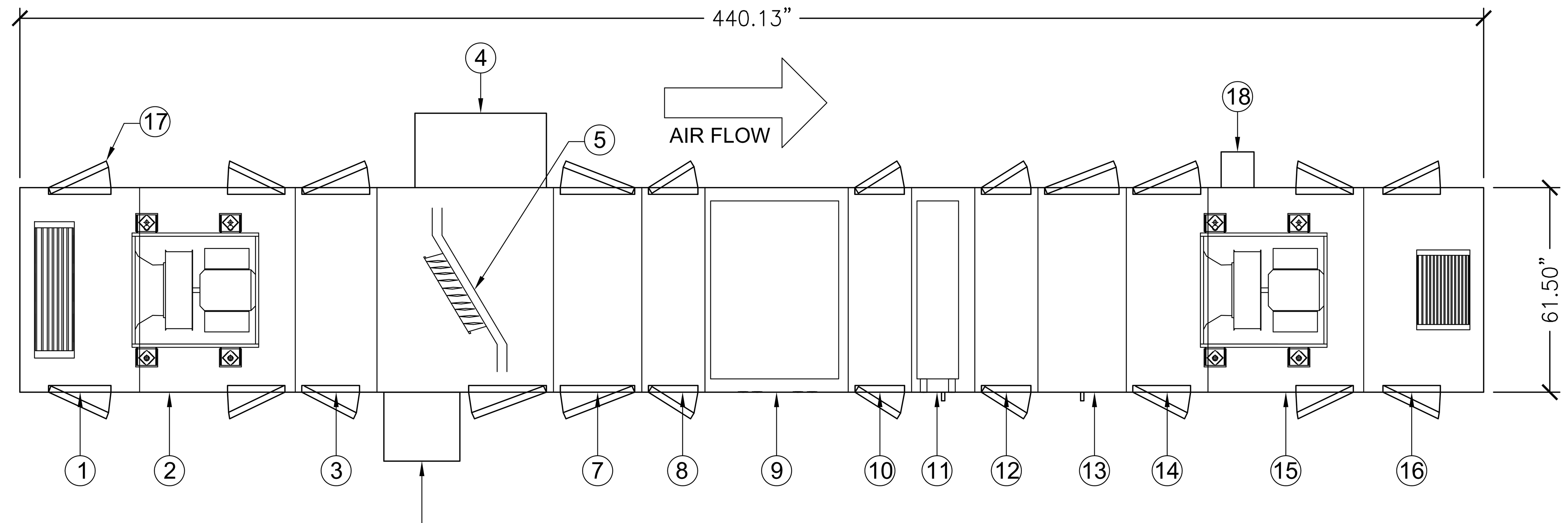
Drawing Number: M5.03

Dwg. 25 of 47

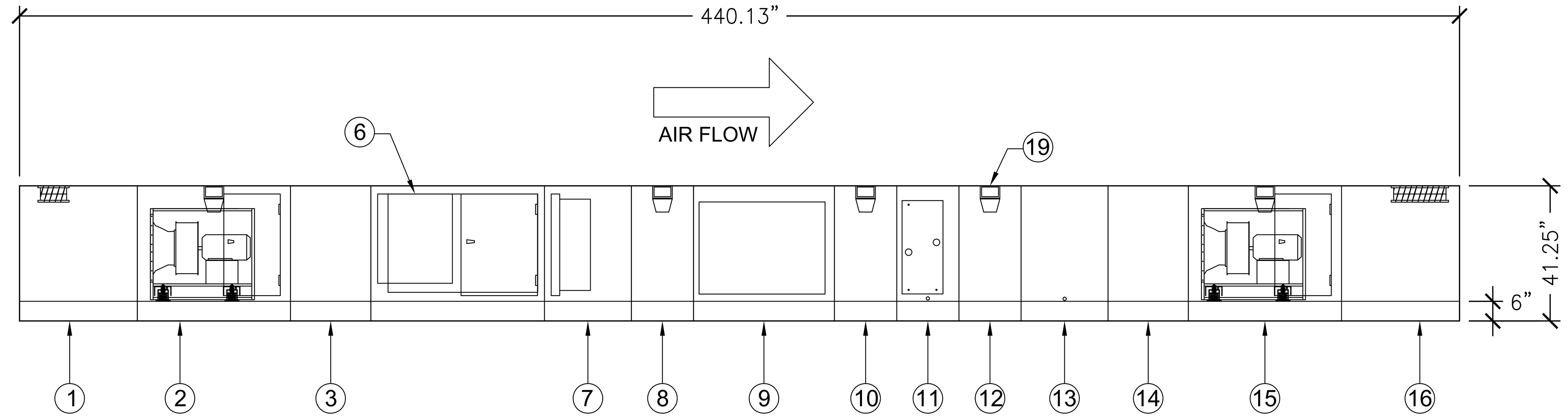
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



PLAN VIEW

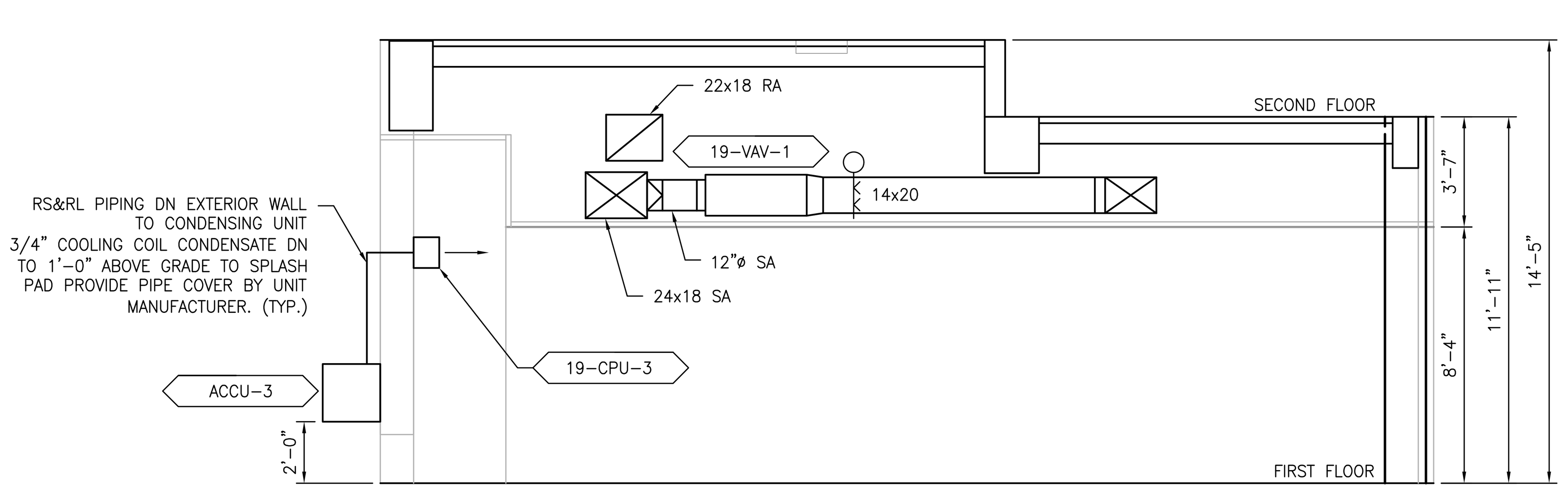


ELEVATION VIEW

1 AHU 22 COMPONENT DIAGRAM

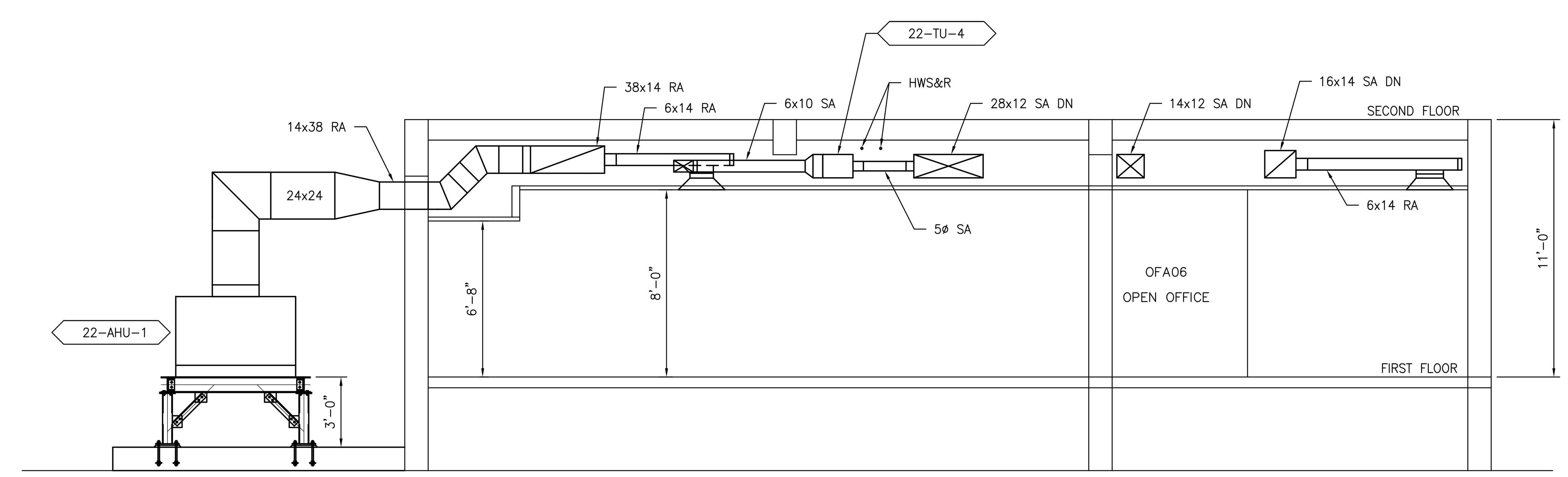
NTS

SECTION LIST	
SECTION	DESCRIPTION
1	INTAKE PLENUM - TOP OPENING WITH DAMPER
2	PLENUM RETURN FAN - 12in. DIAMETER FC, CLASS 1 RETURN FAN 2 HP 460/3
3	CONTROLS SECTION
4	OUTSIDE AIR INTAKE HOOD WITH DAMPER
5	RETURN AIR DAMPER LEFT
6	RELIEF AIR HOOD
7	12in. CARTRIDGE - 65% eff - MERV 11
8	CONTROLS SECTION
9	HEATING COIL - STEAM INTEGRAL FACE AND BYPASS DAMPER
10	ACCESS SECTION
11	COOLING COIL - 6 ROWS, COIL TYPE W WITH STAINLESS STEEL DRAIN PAN
12	ACCESS SECTION
13	FUTURE STAINLESS STEEL HUMIDIFIER SECTION
14	ACCESS SECTION
15	PLENUM SUPPLY FAN - 14in. DIRECT-DRIVE PLENUM, CLASS 1 SUPPLY FAN 5 HP 460/3
16	DISCHARGE PLENUM - TOP OPENING WITH DAMPER
17	ACCESS DOORS ON BOTH SIDES OF UNIT. IN ALL COMPONENTS.
18	LIGHT SWITCH AND/OR RECEPTACLE LH
19	MARINE LIGHT (TYP. 5)



2 BUILDING 19 SECTION

1/4"=1'0"



3 BUILDING 22 SECTION

1/4"=1'0"

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

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Drawing Title: MECHANICAL DETAILS

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: M5.04

Dwg. 26 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

SINGLE DUCT AIR TERMINAL UNIT SCHEDULE

MARK	LOCATION	AREA AND/OR ROOM SERVED	SYSTEM AIR HANDLING	SIZE	AIR FLOW MAX CFM	AIR FLOW MAX [L/s]	AIR FLOW MIN CFM	AIR FLOW MIN [L/s]	ADDITIONAL SOUND ATTUNATION REQUIRED	CONTROL TYPE	CONTROL SEQUENCE	REHEAT HW	REHEAT ELEC	REHEAT NONE	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
VAV-1	FIRST FLOOR	CLEAN SUPPLY STORAGE	AC-3-19		1800	[850]	1800	[850]	NONE	VAV	5 DEGREE DEADBAND		YES		TITUS DESV	----
VAV-2	FIRST FLOOR	STERILE STORAGE ROOM	AC-3-19		1500	[710]	1500	[710]	NONE	VAV	5 DEGREE DEADBAND		YES		TITUS DESV	

ELECTRIC DUCT MOUNTED HEATER SCHEDULE

MARK	LOCATION	SYSTEM AND/OR SERVICE	TYPE	AIR FLOW CFM	EAT °F	LAT °F	APD IN WG	CAPACITY KW	POWER PHASE	POWER VOLT	CONTROL TYPE	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
19-EDH-1	CLEAN SUPPLY STORAGE	VAV-1	OPEN COIL, HELICAL RESISTANCE ELEMENTS	1800	55	73.4	0.15	10.5	1	208	SCR	PROVIDED BY AIR TERMINAL UNIT MANUFACTURER	----
19-EDH-2	STERILE STORAGE	VAV-2	OPEN COIL, HELICAL RESISTANCE ELEMENTS	1500	55	75	0.15	9.5	1	208	SCR	PROVIDED BY AIR TERMINAL UNIT MANUFACTURER	----

AIR DEVICE SCHEDULE (SUPPLY)

MARK	PS	MAX APD IN WG	MAX APD [Pa]	MOUNTING	PANEL/FRAME SIZE IN x IN	PANEL/FRAME SIZE [mm x mm]	NECK SIZE IN	NC	DAMPER	FINISH	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
CD-1	LOUVERED FACE	0.100	[25]	LAY-IN	24 x 24	[600 x 600]	SEE PLAN	19	NONE	WHITE	TITUS TDV	SEE BELOW

NOTES
1. SEE FLOOR PLAN FOR THROW PATTERN.
2. SEE DETAIL FOR DAMPER IN BRANCH DUCT SERVING EACH DIFFUSER.
3. PROVIDE INDUCTION VANES.
4. PROVIDE SQUARE TO ROUND ADAPTER.

AIR DEVICE SCHEDULE (RETURN)

MARK	TYPE	MAX APD IN WG	MAX APD [Pa]	MOUNTING	PANEL/FRAME SIZE IN x IN	PANEL/FRAME SIZE [mm x mm]	NECK SIZE IN x IN	NC	DAMPER	FINISH	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
RG-1	RETURN GRILLE	0.100	25.000	LAY-IN	24 x 24	[250 x 250]	SEE PLAN		NONE	WHITE	TITUS 350FL	NOTE 2
RG-2	RETURN GRILLE	0.100	25.000	LAY-IN	24 x 24	[250 x 250]	SEE PLAN		NONE	WHITE	TITUS 350FL	NOTES 1&2

NOTES
1. PROVIDE FILTER.
2. COORDINATE WITH CEILING TYPE.

CLEAN STEAM GENERATOR SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	TYPE	SOURCE OF MAKEUP	WATER CONDITIONS FLOW GPM	WATER CONDITIONS EWT °F	PRODUCED STEAM FLOW LBS/HR	PRODUCED STEAM PRESS PSIG	STEAM PRESSURE ENT CONTROL VALVE PSIG	STEAM PRESSURE ENT HEAT EXCHANGER PSIG	CONTROL VALVE LBS/HR	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
CSG-1	MECH RM		19-SH-1	UNFIRED		0.023	60	11.72	5	15	15	12.892	NORTEC SETC 050	PROVIDES HUMIDIFICATION STEAM FOR 19-SH-1
CSG-2	MECH RM		19-SH-2	UNFIRED		0.023	60	11.72	5	15	15	12.892	NORTEC SETC 050	PROVIDES HUMIDIFICATION STEAM FOR 19-SH-2

STEAM HUMIDIFER SCHEDULE

MARK	LOCATION	SYSTEM AND/OR SEVICE	HUMIDIFIER TYPE	AIR FLOW CFM	# OF MANIFOLDS	EAT Db °F	EAT Wb °F	EAT RELATIVE HUMIDITY %	LAT DEWPOINT °F	SOURCE	STEAM PRESS ENT VALVE PSIG	STEAM FLOW LBS/HR	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
19-SH-1	MECH. RM	CLEAN SUPPLY STORAGE	INSERTION	1800	1	55	36.8	6	42.9	CLEAN STEAM	0	11.72	NORTEC SAM-E	1, 2, 4
19-SH2	MECH. RM	STERILE STORAGE	INSERTION	1500	1	55	36.8	6	42.9	CLEAN STEAM	0	11.72	NORTEC SAM-E	1, 3, 4

1. GENERATORS LOCATED IN MECHANICAL ROOM
2. DUCT MOUNTED HUMIDIFICATION LOCATED IN CLEAN SUPPLY STORAGE. CLEAN STEAM PROVIDED BY CSG-1
3. DUCT MOUNTED HUMIDIFICATION LOCATED IN STERILE STORAGE. CLEAN STEAM PROVIDED BY CSG-2
4. FOLLOW MANUFACTURERS RECOMMENDATATIONS FOR ATMOSPHERIC STEAM PIPE AND GENERATOR SIZING FOR DISTANCES GREATER THEN 12'-0"

DUCTLESS SPLIT AIR CONDITIONING HEAT PUMP SYSTEM SCHEDULE (INDOOR UNIT)

MARK	LOCATION	BLDG SERVED	AREA AND/OR SERVICE	FLOOR	APPLICATION	NOM. AIR FLOW CFM	FAN MOTOR OUTPUT W	COOLING CAPACITY MIN TOT CAPACITY BTUH	COOLING CAPACITY MIN SENS CAPACITY BTUH	COOLING CAPACITY INPUT POWER KW	HEATING CAPACITY MIN CAPACITY BTUH	HEATING CAPACITY INPUT POWER KW	REFRIGERANT / PIPING REFRIG TYPE	LIQUID DIA - IN.	SUCTION DIA - IN.	ELECTRICAL MAX FUSE	MCA	POWER SUPPLY V	PH	HZ	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
19-CPU-1	EXISTING ELEV MECH RM	BLDG 19	EXISTING ELEV MECH RM	FIRST	CLG ONLY	775	56	24,000	18,785	---	---	---	R-410A	3/8	5/8	---	---	---	---	---	MITSUBISHI ELECTRIC PKA-A24KA	REFER TO 1 ,2 ,3 ,4 & 5
19-CPU-2	CLEAN SUPPLY STORAGE	BLDG 19	CLEAN SUPPLY STORAGE	FIRST	CLG & HTG	425	30	18,000	12,380	0.03	20,000	0.03	R-410A	1/4	1/2	15	0.38	208-230	1	60	MITSUBISHI ELECTRIC PKFY-P18NHMU-E2	REFER TO 2 ,4, 5 & 6
19-CPU-3	CLEAN SUPPLY STORAGE	BLDG 19	CLEAN SUPPLY STORAGE	FIRST	CLG & HTG	425	30	18,000	12,380	0.03	20,000	0.03	R-410A	1/4	1/2	15	0.38	208-230	1	60	MITSUBISHI ELECTRIC PKFY-P18NHMU-E2	REFER TO 2 ,4, 5 & 6
19-CPU-4	STERILE STORAGE	BLDG 19	STERILE STORAGE	FIRST	CLG & HTG	425	30	18,000	12,380	0.03	20,000	0.03	R-410A	1/4	1/2	15	0.38	208-230	1	60	MITSUBISHI ELECTRIC PKFY-P18NHMU-E2	REFER TO 2 ,4, 5 & 7
19-CPU-5	STERILE STORAGE	BLDG 19	STERILE STORAGE	FIRST	CLG & HTG	425	30	18,000	12,380	0.03	20,000	0.03	R-410A	1/4	1/2	15	0.38	208-230	1	60	MITSUBISHI ELECTRIC PKFY-P18NHMU-E2	REFER TO 2 ,4, 5 & 7

NOTES
1. POWERED BY OUTDOOR UNIT
2. MOUNT WALL MOUNTED UNIT 6'-0" ABOVE FINISHED FLOOR OR PER MANUFACTURERS RECOMMENDATIONS.
3. REFRIGERANT TO BE R-410a
4. PAIR CONDENSING UNIT 19-CU-1 WITH 19-CPU-1
5. PROVIDE INTERCONNECTING PIPING AND ADDITIONAL CHARGE BETWEEN ALL COMPONENTS. PIPING TO BE PER MANUFACTURERS RECOMMENDATION PER COORDINATED ROUTING.
6. PAIR CONDENSING UNIT 19-CU-2 WITH 19-CPU-2 AND 19-CPU-3
7. PAIR CONDENSING UNIT 19-CU-3 WITH 19-CPU-4 AND 19-CPU-5

DUCTLESS SPLIT AIR CONDITIONING HEAT PUMP SYSTEM SCHEDULE (OUTDOOR UNIT)

MARK	LOCATION	BLDG SERVED	AREA AND/OR SERVICE	APPLICATION	NOM. AIR FLOW CFM	FAN MOTOR OUTPUT W	COOLING CAPACITY MIN TOTAL CAPACITY BTUH	SEER	HEATING CAPACITY MIN CAPACITY BTUH	COP	REFRIGERANT / PIPING REFRIG TYPE	LIQUID DIA - IN.	SUCTION DIA - IN.	ELECTRICAL MAX FUSE	MCA	POWER SUPPLY INPUT (W)	V	PH	HZ	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
19-ACCU-1	OUTSIDE	BLDG 19	EXISTING ELEV MECH RM	CLG ONLY	705	---	24,000	17	---	---	R-410A	3/8	5/8	30	18	2270	208-230	1	60	MITSUBISHI ELECTRIC PUY-A24NHA3	REFER TO NOTES 1, 2, 3, & 4
19-ACCU-2	OUTSIDE	BLDG 19	CLEAN SUPPLY STORAGE	CLG & HTG	3530	86	36,000	14.3	40,000	8.2	R-410A	3/8	5/8	40	26	3220	208-230	1	60	MITSUBISHI ELECTRIC PUMY-P36NHMR1	REFER TO NOTES 2, 4, & 5
19-ACCU-3	OUTSIDE	BLDG 19	STERILE STORAGE	CLG & HTG	3530	86	36,000	14.3	40,000	8.2	R-410A	3/8	5/8	40	26	3220	208-230	1	60	MITSUBISHI ELECTRIC PUMY-P36NHMR1	REFER TO NOTES 2, 4, & 6

NOTES
1. POWERS INDOOR UNIT
2. REFRIGERANT TO BE R-410a
3. PAIR CONDENSING UNIT 19-CU-1 WITH 19-CPU-1
4. PROVIDE INTERCONNECTING PIPING AND ADDITIONAL CHARGE BETWEEN ALL COMPONENTS. PIPING TO BE PER MANUFACTURERS RECOMMENDATION PER COORDINATED ROUTING.
5. PAIR CONDENSING UNIT 19-CU-2 WITH 19-CPU-2 AND 19-CPU-3
6. PAIR CONDENSING UNIT 19-CU-3 WITH 19-CPU-4 AND 19-CPU-5

COOLING ONLY TWO PIPE FAN COIL UNIT SCHEDULE

MARK	LOCATION	TYPE	FAN AIR FLOW CFM	EXTERNAL APD IN WG	COOLING REQUIREMENTS MIN SENS CAPACITY MBH	MIN TOTAL CAPACITY MBH	EAT Db °F	EAT Wb °F	CIRCULATING WATER FLOW GPM	EWT °F	WPD FT	RUNOUT SIZE IN	FILTER MERV RATING	FAN MOTOR POWER HP	PHASE	VOLT	RPM	SPEED CONTROL	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
FCU-1	MECH	HORIZONTAL	401	0.25	12.6	16.8	---	---	3.4	42	2.44		8	1/10	1	115	1750	SEE NOTE	TITUS HBP	MANUF TO PROVIDE FILTERED RETURN
FCU-2	VENDING	HORIZONTAL	401	0.25	12.6	16.8	---	---	3.4	42	2.44		8	1/10	1	115	1750	SEE NOTE	TITUS HBP	MANUF TO PROVIDE FILTERED RETURN

NOTE
1. PROVIDE FLEX CONNECTIONS AT SUPPLY AND RETURN AIR DUCT CONNECTIONS TO UNIT
2. PROVIDE HANGER SUPPORTS TO SECURE TO STRUCTURE ABOVE WITH SPRING ISOLATORS.
3. PROVIDE DOUBLE WALL INSULATED 304 SS DRAIN PAN AND PIPE CONNECTION.
4. INSULATE FULL LENGTH OF CONDENSATE DRAIN PIPING.
5. COORDINATE ACCESS WITH CEILING GRID.

ROOM AIR BALANCE SCHEDULE

ROOM NO	ROOM NAME	AIR HANDLING UNIT NO	TERMINAL UNIT	INDIVIDUAL ROOM TEMP CONTROL	SUPPLY ROOM AIR FLOW CFM	SUPPLY ROOM AIR FLOW L/S	# OF AIR DEVICES	AIR DEVICE MARK	SUPPLY FAN	RETURN OR EXHAUST RETURN OR EXHAUST (R/E)	ROOM AIR FLOW CFM	ROOM AIR FLOW L/S	# OF AIR DEVICES	AIR DEVICE MARK	RETURN OR EXHAUST FAN	ROOM AIR FLOW CV	ROOM AIR FLOW VAV	ROOM AIR BALANCE	NET INFILTRATION CFM	NET INFILTRATION [L/s]	NET EXFILTRATION CFM	NET EXFILTRATION [L/s]	REMARKS
0	CLEAN SUPPLY STORAGE	AC-3-19	VAV-1	Y	1800	[850]	5	SD	1-SF4	R	1575	[740]	5	RG-1	1-RF4		X	=	0	[ ]	225	[110]	----
0	STERILE ROOM STORAGE	AC-3-19	VAV-2	Y	1500	[710]	5	SD	1-SF4	R	1300	[610]	5	RG-2	1-RF4		X	=	0	[ ]	200	[94]	----

NOTE

ROOMS OR AREAS DO NOT HAVE INDIVIDUAL HUMIDITY CONTROL UNLESS NOTED.

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

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Drawing Title: BLDG 19: MECHANICAL SCHEDULES

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 19-M6.01

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

SINGLE DUCT AIR TERMINAL UNIT SCHEDULE

MARK	LOCATION	AREA AND/OR ROOM SERVED	SYSTEM AIR HANDLING	SIZE	AIR FLOW MAX CFM	AIR FLOW MAX [L/s]	AIR FLOW MIN CFM	AIR FLOW MIN [L/s]	ADDITIONAL SOUND ATTUNATION REQUIRED	CONTROL TYPE	CONTROL SEQUENCE	REHEAT HW	REHEAT ELEC	REHEAT NONE	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
101-TU-1	FIRST FLOOR	OFA01	22-AHU-1	5	250	[120]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-2	FIRST FLOOR	OFA02	22-AHU-1	4	225	[110]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-3	FIRST FLOOR	OFA03	22-AHU-1	4	225	[110]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-4	FIRST FLOOR	OFA04	22-AHU-1	4	225	[110]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-5	FIRST FLOOR	OFA05	22-AHU-1	4	100	[47]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-6	FIRST FLOOR	OFA06	22-AHU-1	9	975	[460]	375	[180]	NONE	VAV		YES			TITUS DESV	----
101-TU-7	FIRST FLOOR	OFA07	22-AHU-1	4	100	[47]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-8	FIRST FLOOR	OFA08	22-AHU-1	4	100	[47]	50	[24]	NONE	VAV		YES			TITUS DESV	----
101-TU-9	FIRST FLOOR	SRS03	22-AHU-1	10	1250	[590]	340	[160]	NONE	VAV		YES			TITUS DESV	----
101-TU-10	FIRST FLOOR	SRS03	22-AHU-1	10	1250	[590]	340	[160]	NONE	VAV		YES			TITUS DESV	----

AIR DEVICE SCHEDULE (SUPPLY)

MARK	TYPE	MAX APD IN WG	MAX APD [Pa]	MOUNTING	PANEL/FRAME SIZE IN x IN	PANEL/FRAME SIZE [mm x mm]	NECK SIZE IN	NC	DAMPER	FINISH	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
CD-1	LOUVERED FACE	0.100	[25]	LAY-IN	24 x 24	[600 x 600]	SEE PLAN		NONE	WHITE	TITUS TDV	SEE BELOW

NOTES
1. PROVIDE INDUCTION VANES.
2. SEE FLOOR PLAN FOR THROW PATTERN.
3. SEE DETAIL FOR DAMPER IN BRANCH DUCT SERVING EACH DIFFUSER.
4. PROVIDE SQUARE TO ROUND ADAPTER.

AIR DEVICE SCHEDULE (RETURN)

MARK	TYPE	MAX APD IN WG	MAX APD [Pa]	MOUNTING	PANEL/FRAME SIZE IN x IN	PANEL/FRAME SIZE [mm x mm]	NECK SIZE IN x IN	NC	DAMPER	FINISH	BASIS OF DESIGN (APPROVED EQUAL)	REMARKS
RG-1	LOUVERED FACE	0.100	25.000	LAY-IN	24 x 24	[250 x 250]	SEE PLAN		NONE	WHITE	TITUS 350FL	SEE BELOW

NOTE
COORDINATE WITH CEILING TYPE.

AIR HANDLING UNIT SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	TYPE	AIR FLOW	AIR FLOW SUPPLY CFM	AIR FLOW SUPPLY [L/s]	AIR FLOW MIN OA CFM	AIR FLOW MIN OA [L/s]	AIR FLOW RETURN CFM	AIR FLOW RETURN [L/s]	SUPPLY FAN MARK	RETURN OR RELIEF FAN MARK	PREFILTER MARK	AFTER FILTER MARK	FINAL FILTER MARK	COOLING COIL MARK	PREHEAT COIL	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
22-AHU-1	22-AHU-1	BUILDING 22	PACKAGED ROOFTOP	VARIABLE VOLUME	4700	[2200]	1670	[790]	3030	[1400]	22-SF-1	22-RF-1	22-PF-1	22-AF-1	22-FF-1	22-CC-1	22-PHC-1	TRANE PERFORMANCE CLIMATE CHANGER	SEE BELOW

NOTES:
1. INSTALL UNIT PER MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE UNIT WITH PHASE MONITORING.

FAN SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	AIR FLOW CFM	AIR FLOW [L/s]	ESP IN	ESP [Pa]	FAN TYPE	FAN WHEEL	FAN CLASS	FAN ARRANGEMENT, ROTATION, AND DISCHARGE	FAN DIAMETER IN	FAN DIAMETER [mm]	FAN MIN % EFF	FAN DRIVE	FAN MAX RPM	MOTOR ELECTRICAL NOMINAL POWER BHP	NOMINAL POWER HP	NOMINAL POWER [kW]	PHASE	VOLT	RPM	SPEED CONTROL	CONTROL SEQUENCE	REMARKS
22-SF-1	22-AHU-1	BUILDING 22	SUPPLY AIR	4700	[2200]	3	[750]	PLENUM	---	---	FRONT-TOP DISCHARGE	18.25	[460]	---	DIRECT	2730	7.2	10	[8]	3	208	1800	VFD	---	PROVIDED BY AHU MANUF
22-RF-1	22-AHU-1	BUILDING 23	RETURN AIR	4700	[2200]	2	[500]	PLENUM	---	---	FRONT-TOP DISCHARGE	18.25	[460]	---	DIRECT	2104	4.1	5	[4]	3	208	1800	VFD	---	PROVIDED BY AHU MANUF

NOTE
ALL SELECTIONS ARE BASED ON AN ALTITUDE OF ZERO FEET.

AIR FILTER SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	MERV RATING	AIR FLOW CFM	FACE VELOCITY FPM	APD INITIAL IN	APD CHANGEOVER IN	HOUSING TYPE	CARTRIDGES #	CARTRIDGES SIZE IN	CARTRIDGES ARRANGEMENT	REMARKS
22-PF-1	22-AHU-1	BUILDING 22	22-AHU-1	7	4700	542	---	0.75	CARTRIDGE	---	2	---	PROVIDED BY AHU MANUFACTURER
22-AF-1	22-AHU-1	BUILDING 22	22-AHU-2	11	4700	542	---	0.75	CARTRIDGE	---	12	---	PROVIDED BY AHU MANUFACTURER

CHILLED WATER COOLING COIL SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	AIR FLOW CFM	AIR FLOW [L/s]	MAX FACE VELOCITY FPM	MAX FACE VELOCITY [M/s]	APD IN WG	APD [Pa]	EAT Db °F	EAT Db [°C]	EAT Wb °F	EAT Wb [°C]	LAT Db °F	LAT Db [°C]	LAT Wb °F	LAT Wb [°C]	TOTAL CAPACITY MBH	TOTAL CAPACITY [kW]	SENSIBLE CAPACITY MBH	SENSIBLE CAPACITY [kW]	CHILLED WATER FLOW GPM	CHILLED WATER FLOW [L/s]	CHILLED WATER EWT °F	CHILLED WATER EWT [°C]	CHILLED WATER LWT °F	CHILLED WATER LWT [°C]	CHILLED WATER WPD FT	CHILLED WATER WPD [M]	REMARKS
22-CC-1	22-AHU-1	BUILDING 22	22-AHU-1	4700	[2200]	512	[3]	0.75	[190]	79.3	[26]	65.4	[19]	52	[11]	51.7	[11]	190.4	[56]	141.2	[41]	38	[2]	44	[7]	54	[12]	5.5	[2]	PROVIDED BY AHU MANUFACTURER

NOTE
THE COOLING COIL FIN SPACING SHALL NOT EXCEED 132 FINS PER FOOT [400 FINS PER METER].

INTEGRAL FACE AND BYPASS STEAM HEATING COIL SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	APPLICATION	AIR FLOW CFM	MAX FACE VELOCITY FPM	APD IN WG	TEMPERATURES EAT °F	TEMPERATURES LAT °F	TOTAL MIN CAPACITY MBH	STEAM ENT CONT VALVE PSIG	STEAM ENT COIL PSIG	STEAM FLOW LBS/HR	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
22-PHC-1	22-AHU-1	BUILDING 22	22-AHU-1	AHU PREHEAT	4700	648	0.55	0	74	378	15	---	399	PROVIDED BY AHU MANUFACTURER	----

PUMP SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	TYPE	CIRCULATING FLUID FLUID	FLOW GPM	FLOW [L/s]	HEAD FT	HEAD [kPa]	NPSH AVAILABLE FT	NPSH AVAILABLE [kPa]	TEMPERATURE °F	TEMPERATURE [°C]	SP GR	MIN % EFF	ELECTRICAL MOTOR NOMINAL POWER HP	NOMINAL POWER [kW]	PHASE	VOLT	MAX RPM	SPEED CONTROL	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
22-P-1	BASEMENT	BLDG 22	HEATING HOT WATER	END SUCTION	WATER	15	[1]	15	[240]		[ ]	160	[71]	0.98		0.5	[ ]	3	208	1200	VFD	B&G SERIES 1510 1-1/4AC	SKID MOUNTED
22-P-2	BASEMENT	BLDG 22	HEATING HOT WATER	END SUCTION	WATER	15	[1]	15	[240]		N/A	160	[71]	0.98		0.5	[ ]	3	208	1200	VFD	B&G SERIES 1510 1-1/4AC	SKID MOUNTED (BACKUP)
22-P-3	BASEMENT CRAWLSPACE	BLDG 22	CHILLED WATER	CARTRIDGE	WATER	38	[2]	20	[320]		N/A	44	[7]	1		1.5	[1]	3	208	1800	ON/OFF	B&G SERIES PD	

NOTE

PUMPS 22-P-1 AND 22-P-2 ARE TO BE PROVIDED AS PART OF HEATING HOT WATER EQUIPMENT SKID. SKID BASIS OF DESIGN (OR APPROVED EQUAL): B&G MODEL HTP2-45

EXPANSION TANK SCHEDULE

MARK	LOCATION	SYSTEM AND/OR SERVICE	TYPE	APPROX SYSTEM VOLUME GAL	APPROX SYSTEM VOLUME [L]	SYSTEM TEMPERATURE RANGE MIN °F	SYSTEM TEMPERATURE RANGE MIN [°C]	SYSTEM TEMPERATURE RANGE MAX °F	SYSTEM TEMPERATURE RANGE MAX [°C]	INITIAL PRESSURE IN TANK PSIG	INITIAL PRESSURE IN TANK [kPa]	MAX OPERATING PRESSURE PSIG	MAX OPERATING PRESSURE [kPa]	FILL PRESSURE AT TANK RELIEF VALVE PSIG	FILL PRESSURE AT TANK RELIEF VALVE [kPa]	FILL PRESSURE AT TANK AT TANK PSIG	FILL PRESSURE AT TANK AT TANK [kPa]	MIN VOLUME TANK GAL	MIN VOLUME TANK [L]	MIN ACCEPTANCE VOLUME GAL	MIN ACCEPTANCE VOLUME [L]	PIPE SIZE TO TANK IN	PIPE SIZE TO TANK [mm]	COLD WATER FILL SIZE IN	COLD WATER FILL SIZE [mm]	BASIS OF DESIGN (OR APPROVED EQUAL)	REMARKS
1-ET1	BASEMENT	HEATING WATER	HORIZONTAL DIAPHRAGM	30	[110]	160	[71]	180	[82]	12	[83]	125	[860]	---	---	---	---	8	[30]	2.4	[9]	1	[25]	0.5	[13]	B&G MODEL D15	SKID MOUTNED

NOTE
1-ET1 IS TO BE PROVIDED AS PART OF HEATING HOT WATER EQUIPMENT SKID. SKID BASIS OF DESIGN (OR APPROVED EQUAL): B&G MODEL HTP2-45

STEAM TO WATER HEAT EXCHANGER SCHEDULE

MARK	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	TYPE	WATER CONDITIONS FLOW GPM	FLOW [L/s]	EWT °F	EWT [°C]	LWT °F	LWT [°C]	WPD FT	WPD [kPa]	STEAM PRESSURE ENT CONTROL VALVE PSIG	ENT CONTROL VALVE [kPa]	ENT HEAT EXCHANGER PSIG	ENT HEAT EXCHANGER [kPa]	CONTROL VALVE LBS/HR	CONTROL VALVE [kg/HR]	TRAP TRAP #	TRAP CAPACITY LBS/HR	TRAP CAPACITY [kg/HR]	BASIS OF DESIGN (OR APPROVED EQUAL	REMARKS
1-SWHX1	BSMT	22-AHU-1	HEATING WATER	SHELL & TUBE	15	[1]	160	[71]	180	[82]	5	[15]	15	[100]	15	[100]	155	[70]	-	155	[70]	B&G MODEL SU-42-2	SKID MOUNTED

NOTE

1-SWHX1 IS TO BE PROVIDED AS PART OF HEATING HOT WATER EQUIPMENT SKID. SKID BASIS OF DESIGN (OR APPROVED EQUAL): B&G MODEL HTP2-45

CONSTRUCTION BID DOCUMENTS
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NO.	DESCRIPTION	DATE

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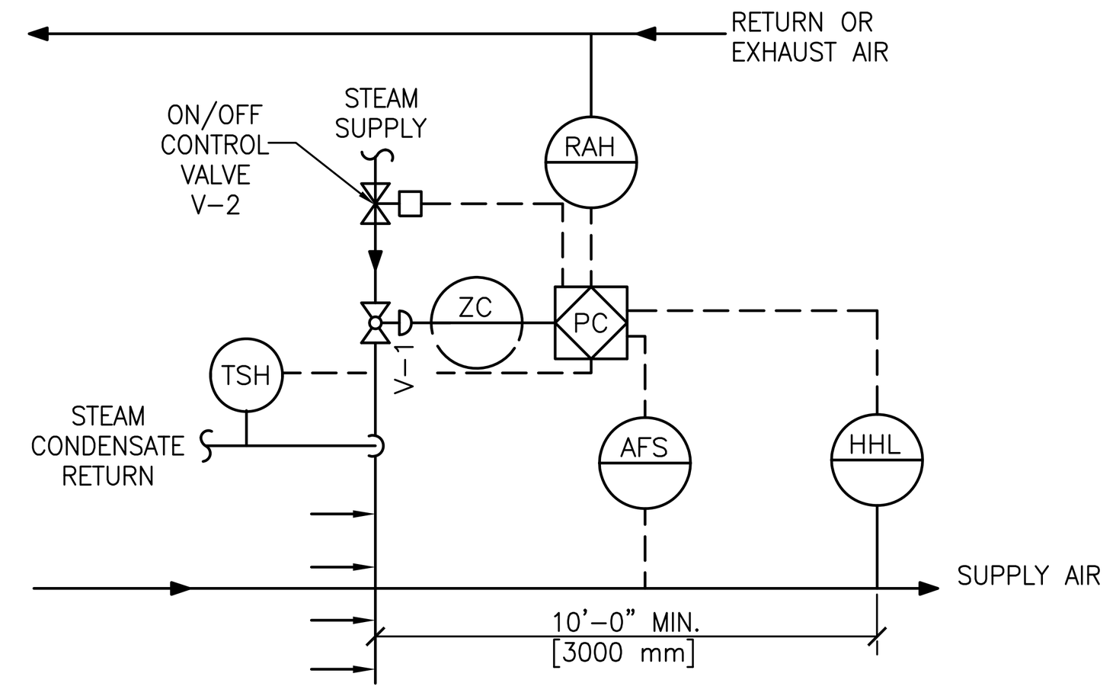
Drawing Title: BLDG 22: MECHANICAL SCHEDULES
Approved: Project Director
Project Title: **LEBANON - EMERGENCY CACHE**
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013
Checked: MP
Drawn: RR
Project Number: VA595-11-127
Building Number: BLDGS. 19 & 22
Drawing Number: 22-M6.01
Dwg. 28 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



STEAM HUMIDIFIER

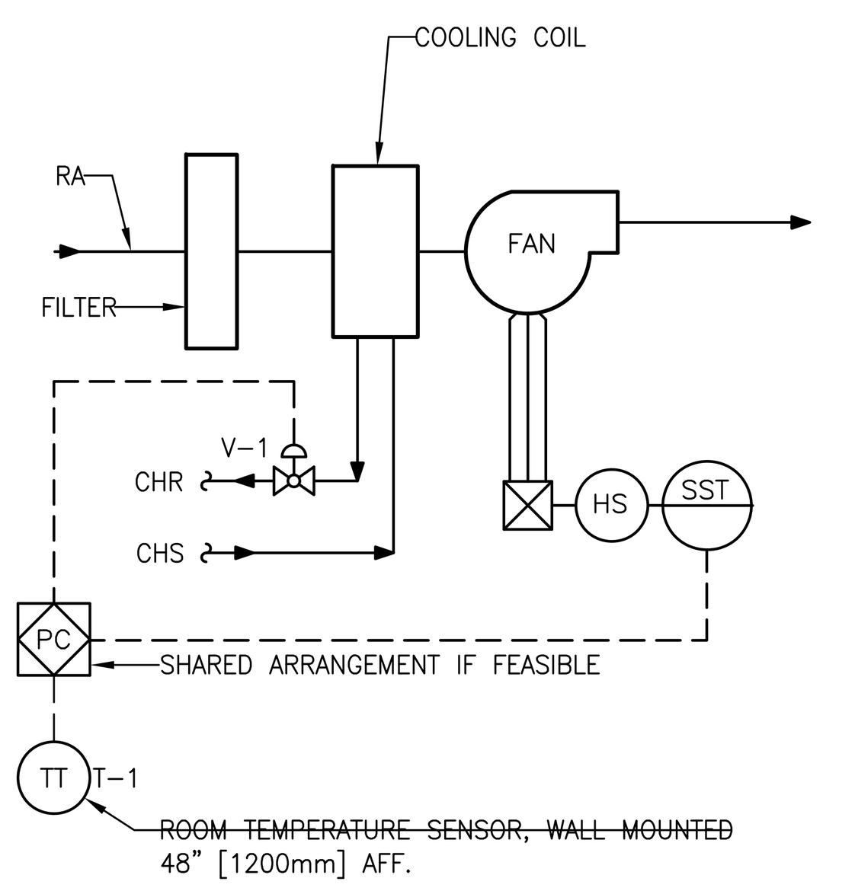
RETURN (OR EXHAUST) AIR HUMIDITY SHALL BE MONITORED. ON A CALL FOR HUMIDIFICATION, HUMIDIFIER VALVE V-1 SHALL MODULATE TO MAINTAIN THE RETURN (OR EXHAUST) AIR HUMIDITY SET POINT TO 30% (ADJUSTABLE). PRIOR TO ACTIVATION OF V-1, THE ON/OFF CONTROL VALVE V-2 SHALL BE ENABLED THROUGH ECC AND JACKET TEMPERATURE SENSED BY TSH SHALL BE WARM ENOUGH TO PREVENT CONDENSATION. THE HIGH LIMIT HUMIDITY SENSOR, LOCATED IN THE SUPPLY AIR DUCT 10 FEET AWAY FROM THE HUMIDIFIER SHALL DISABLE THE HUMIDIFIER AND GIVE AN ALARM SIGNAL TO THE ECC, IF THE SUPPLY AIR HUMIDITY EXCEEDS 90% RH (ADJUSTABLE). THE AIRFLOW SWITCH SHALL PROVE AIRFLOW BEFORE HUMIDITY CONTROLS ARE ACTIVATED.

1 STEAM HUMIDIFIER CONTROLS

NTS

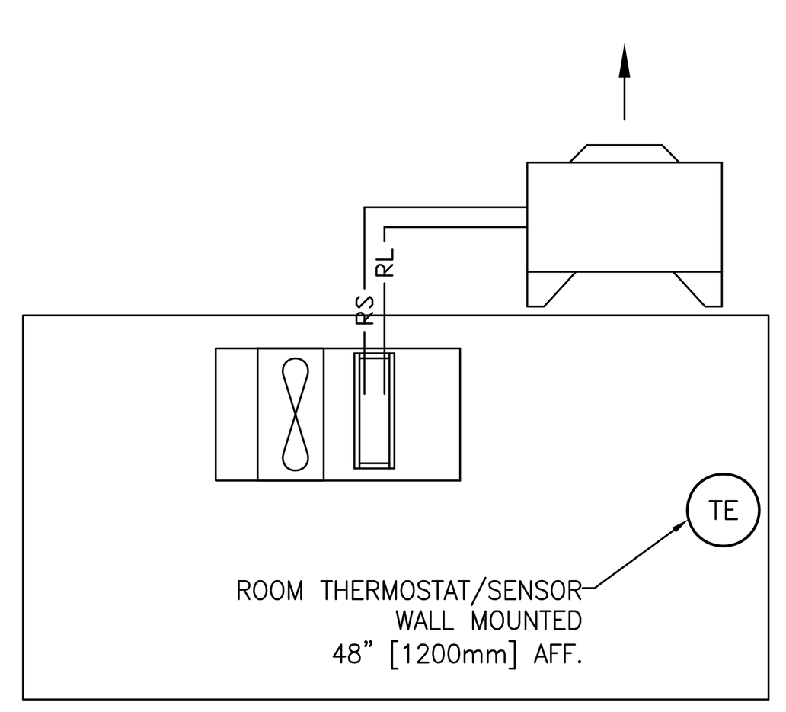
FAN COIL SEQUENCE OF OPERATION (COOLING ONLY)

1. FAN COIL UNIT SHALL OPERATE ON A SCHEDULE AS SET BY THE DCC.
2. MODULATE V-1 TO MAINTAIN SPACE SET POINT AND FAN SHALL CYCLE W/TEMPERATURE.
3. ALARM IF SPACE TEMPERATURE OUTSIDE OF RANGES.



3 COOLING ONLY FAN COIL UNIT CONTROLS

NTS

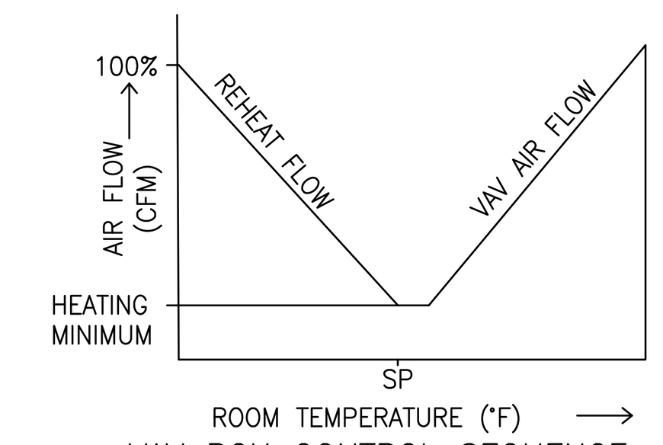


SEQUENCE OF OPERATION:

1. UNIT SHALL BE ENGAGED UPON LOSS OF NORMAL POWER AND ROOM VAV BOX IS UNABLE TO MAINTAIN TEMPERATURE.
2. UNIT SHALL BE DISABLED WHEN NORMAL POWER IS ENGAGED.
3. ROOM THERMOSTAT SHALL MODULATE THE EVAPORATOR FNA AND HEAT PUMP COIL TO MAINTAIN TEMPERATURE SETPOINT (72°F ADJ.).
4. CONDENSING UNIT SHALL COMMUNICATE WITH ASSOCIATED EVAPORATOR(S) TO MAINTAIN REFRIGERANT FLOW, PRESSURE, & TEMPERATURE SO THAT ASSOCIATED EVAPORATOR(S) CAN MAINTAIN ROOM SETPOINT.
5. IF ANY DEVICE HAS A FAULT OR ALARM, THE UNIT SHALL NOTIFY THE EXISTING CENTRAL BMS SYSTEM.

4 SPLIT SYSTEM CONTROL DIAGRAM

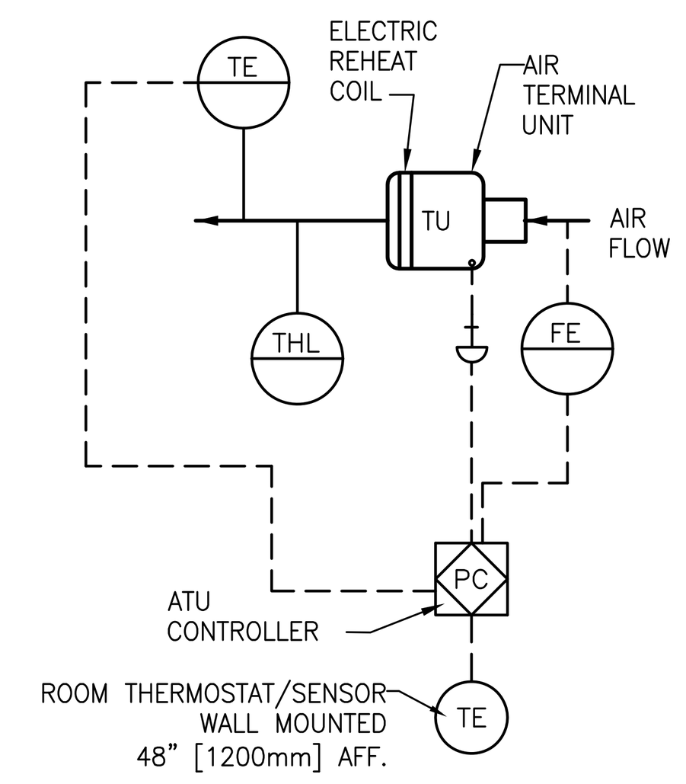
NTS



VAV BOX CONTROL SEQUENCE

NO DEADBAND

A. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.
B. WITH PROOF OF AIRFLOW, AND UPON FURTHER DROP IN SPACE SCR WILL MODULATE TO MAINTAIN SET POINT ± .5° F.
C. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.
D. IF THE TEMPERATURE HIGH LIMIT SENSOR (THL) REGISTERS 115°F (ADJ.) THE ELECTRIC COIL SHALL BE DISABLED AND ALARM THE BMS.



NO SUPPLEMENTAL HEATING

2 VARIABLE VOLUME AIR TERMINAL UNIT CONTROL DIAGRAM

NTS

CONTROLS SYMBOLS

T	ROOM THERMOSTAT/TRANSMITTER – WALL MOUNT
M	ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER – WALL MOUNT
TT	TEMPERATURE TRANSMITTER
TT	TEMPERATURE TRANSMITTER, AVERAGING ELEMENT
MT	MOISTURE (HUMIDITY) TRANSMITTER
PT	PRESSURE TRANSMITTER
SPS	STATIC PRESSURE SENSOR
FT	FLOW TRANSMITTER
IT	CURRENT TRANSMITTER
CT	CONDUCTIVITY TRANSMITTER
SD	SMOKE DETECTOR
PDT	PRESSURE DIFFERENTIAL TRANSMITTER
PDS	PRESSURE DIFFERENTIAL SWITCH
HS	HAND SWITCH (HAND–OFF–AUTO SWITCH)
ZC	VALVE OR DAMPER POSITION CONTROLLER
KR	LOCAL RECORDING TIME CLOCK (RUNTIME)
TSL	TEMPERATURE SWITCH, LOW (FREEZESTAT)
TSH	TEMPERATURE SWITCH, HIGH (FREEZESTAT)
LC	LEVEL CONTROLLER
LT	LEVEL TRANSMITTER
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
EPT	ELECTRONIC TO PNEUMATIC TRANSDUCER
DPHL	DEWPOINT HIGH LIMIT
LTCP	LOCAL TEMPERATURE CONTROL PANEL
HVAC	HVAC CONTROL PANEL
VSMC	VARIABLE SPEED MOTOR CONTROLLER
ECC	INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT ENERGY CONTROL CENTER
TC	TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION
PC	PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION
SC	SPEED CONTROLLER. SEE SEQUENCE OF OPERATION
FC	FLOW CONTROLLER. SEE SEQUENCE OF OPERATION
FSH	FLOW SWITCH HIGH
FSL	FLOW SWITCH LOW
KC	TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE
	TEMPERATURE SENSING ELEMENT FOR TRANSMITTING TEMPERATURE TO EMCS (PROVIDE 12 INCHES [200mm] MINIMUM LENGTH IN DUCT WHEN SPACE PERMITS.)
A	SENSOR WITH AVERAGING ELEMENT TO TRANSMIT TEMPERATURE TO EMCS
	MOTOR STARTER
M	ELECTRIC OPERATED CONTROL DAMPER/OR VALVE

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

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Drawing Title: MECHANICAL CONTROL NOTES AND LEGEND

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

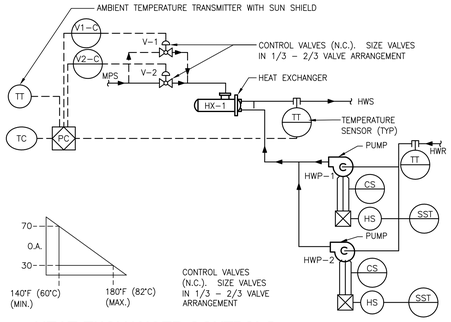
Drawing Number: 19-M8.01

Dwg. 29 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

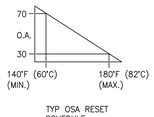


SEQUENCE OF OPERATION:

1. STEAM CONTROL VALVE SHALL MODULATE TO MAINTAIN THE LEAVING HOT WATER TEMPERATURE AT SET POINT.
2. THE LEAVING HOT WATER TEMPERATURE SHALL BE RESET INVERSELY WITH THE OUTDOOR TEMPERATURE AS SCHEDULED.
3. THE LEAD AND LAG PUMPS AND HEAT EXCHANGERS SHALL BE SEQUENTIAL BY THE OPERATOR CONTROLS AT THE PRE-DETERMINED INTERVAL (USUALLY 7 DAYS). IN THE EVENT THE PUMP FAILS TO START WITHIN 30 SECONDS, AN ALARM SHALL BE INITIATED AND THE SECOND PUMP SHALL START AUTOMATICALLY.

VALVE SEQUENCE:

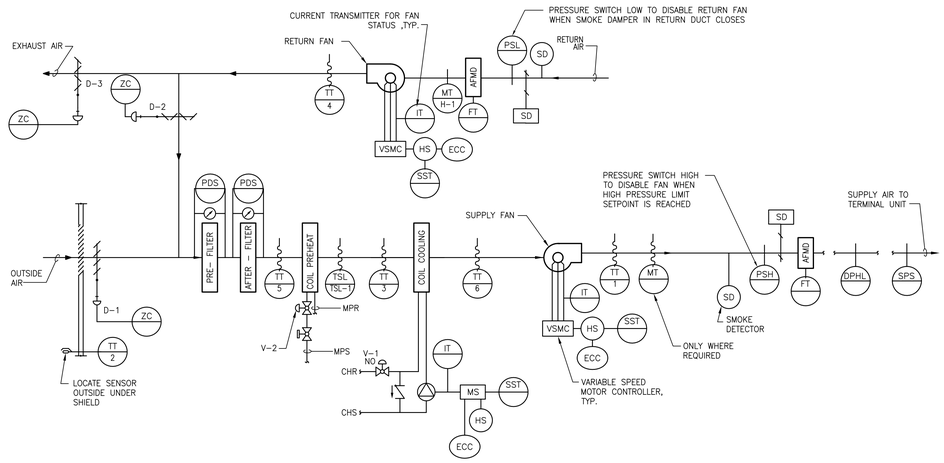
1. V1 (½ CAPACITY) MODULATING FULLY OPEN TO MAINTAIN SET POINT
2. .V2 (½ CAPACITY) MODULATE FULLY OPEN TO MAINTAIN SET POINT.
3. BOTH V1 & V2 MODULATE TOGETHER TO MAINTAIN SET POINT.



TYP OSA RESET SCHEDULE

1 HEAT EXCHANGER CONTROLS (HEATING SYSTEM)

NTS



3 VARIABLE AIR VOLUME AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR CONTROL DIAGRAM

NTS

SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR

1. GENERAL

1.1 UNIT IS NORMALLY STARTED AND STOPPED REMOTELY AT THE ECC. H-O-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED ONLY FOR MAINTENANCE. WHEN THE UNIT IS "OFF" D-1, D-3, SHALL BE FULLY CLOSED. WHEN THE UNIT IS "ON" D-1, SD-1 AND SD-2 SHALL BE FULLY OPEN. D-2 AND D-3 SHALL MODULATE IN ACCORDANCE WITH THE FOLLOWING SEQUENCE:

2. TEMPERATURE CONTROL

2.1 SUPPLY AIR TEMPERATURE, SENSED BY TT-1, SHALL BE MAINTAINED AT SETPOINT VIA DIGITAL CONTROL PANEL BY MODULATING V-1 OR D-2 AND D-3 OR V-2 IN SEQUENCE.

2.2 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS ABOVE 75'F (ADJ) [23.8'C], THE DIGITAL CONTROL PANEL SHALL PREVENT THE MODULATION OF D-2 AND D-3 AND SHALL ASSUME THE MINIMUM OUTSIDE AIR POSITION (D-2 FULLY OPENED AND D-3 FULLY CLOSED). THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.

2.3 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS BETWEEN 55'F [18.3'C] AND THE SUPPLY AIR TEMPERATURE SENSED BY TT-1, DAMPER D-2 SHALL FULLY CLOSE AND D1 AND D3 SHALL BE FULLY OPEN (MAXIMUM OUTSIDE AIR POSITION). THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.

2.4 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS BELOW THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1, DAMPERS D1, D-2 AND D-3 SHALL MODULATE TO MAINTAIN THE SCHEDULED SUPPLY AIR TEMPERATURE. IF D-2 IS OPEN AND D-3 IS CLOSED TO MINIMUM OUTSIDE AIR, V-2 SHALL MODULATE OPEN TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.

2.5 WHEN TEMPERATURE IS ABOVE 55' ON/OFF STEAM CONTROL VALVE IS CLOSED, 55' AND BELOW ON/OFF STEAM CONTROL VALVE SHALL BE OPEN AND ALLOW MODULATING STEAM CONTROL VALVE TO OPERATE AS DESCRIBED ABOVE.

3. AIR FLOW CONTROL

3.1 THE SUPPLY AIR FLOW SHALL BE CONTROLLED BY THE DIGITAL CONTROL PANEL MODULATING THE SUPPLY FAN VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN 3.0" [76mm] OF DUCT STATIC PRESSURE (FIELD ADJUSTABLE), SENSED BY SPS-1. RESET STATIC PRESSURE BASED ON ACTUAL BUILDING LOAD BY POLLING ALL ATU

3.2 THE DIGITAL CONTROL PANEL, USING TOTAL SUPPLY AIR AND RETURN AIR FLOW SIGNALS, SHALL RESET THE RETURN AIR FAN VSMC TO MAINTAIN A CONSTANT AIR FLOW DIFFERENCE BETWEEN THE SUPPLY AIR AND THE RETURN AIR EQUAL TO MINIMUM OUTSIDE AIR.

3.3 USING HIGH PRESSURE SENSOR SPS-2 LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE SUPPLY FAN FROM DEVELOPING OVER 3" [75mm] OF STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE AT SPS-2 DOES EXCEED 3" [75mm] THE SUPPLY AIR FAN SHALL STOP. SPS-2 SHALL BE HARDWIRED TO THE SUPPLY FAN VSMC AND UNIT SHALL BE SHUTDOWN IN HAND,AUTO OR BYPASS MODE. SPS-2 WILL REQUIRE MANUAL RESET AT THE DEVICE.

4. FREEZE PROTECTION

4.1 IF THE AIR TEMPERATURE AS SENSED BY TT-3 FALLS BELOW 45'F [7'C], AN ALARM SIGNAL SHALL INDICATE AT THE DCP AND ECC. IF THIS TEMPERATURE FALLS BELOW 40'F [4.4'C], AS SENSED BY THE TSL THE SUPPLY AND RETURN FANS SHALL SHUT DOWN AND A CRITICAL ALARM SHALL INDICATE AT THE DIGITAL CONTROL PANEL AND ECC. TSL SHALL BE HARDWIRED TO THE SUPPLY FAN UFD AND UNIT SHALL BE SHUTDOWN IN HAND,AUTO OR BYPASS MODE. TSL WILL REQUIRE MANUAL RESET AT THE DEVICE.

4.2 FREEZE PROTECTION PUMP (P-X) SHALL OPERATE DURING ALL OPERATIONAL HOURS OF THE AHU.

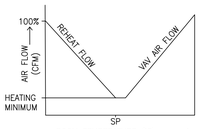
5. AUTOMATIC SHUTDOWN/RESTART

5.1 WHEN SMOKE IS DETECTED BY DUCT SMOKE DETECTOR, SD, THE SUPPLY AND RETURN FANS SHALL SHUT "OFF" AND AN ALARM SIGNAL SHALL BE TRANSMITTED TO THE FIRE ALARM SYSTEM. ALL SMOKE DAMPERS IN THE SUPPLY AND RETURN DUCTS SHALL CLOSE.

5.2 EXHAUST FANS SERVING AREA OF THE SUPPLY FAN SHALL CONTINUE TO RUN. SUPPLY AND RETURN FANS SHALL RESTART AND SMOKE DAMPERS SHALL OPEN WHEN FIRE ALARM CIRCUIT IS RESET.

6. EMERGENCY CONSTANT SPEED OPERATION

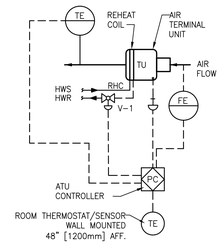
6.1 UPON FAILURE OF THE VSMC, THE SUPPLY AND RETURN FANS SHALL BE STARTED/STOPPED MANUALLY AT THE DIGITAL CONTROL PANEL OR THE ECC THROUGH THE BY-PASS STARTER. FANS SHALL THEN BE OPERATED AT CONSTANT SPEED.



VAV BOX CONTROL SEQUENCE

NO DEADBAND

A. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.
B. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT ± .5' F. THE ADJUSTABLE TOLERANCE OF ± .5' F HAS BEEN SELECTED TO PREVENT VALVE HUNTING
C. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.



NO SUPPLEMENTAL HEATING

2 VARIABLE VOLUME AIR TERMINAL UNIT CONTROL DIAGRAM

NTS

JOB: 0555.09
BUILDING: VA SAMPLE POINTS LIST

SYSTEM: VAV AIR HANDLER SYSTEM COMPONENT:	POINT ID	ABBREVIATION	POINT LEGEND	SYSTEM OUTPUTS BINARY	SYSTEM OUTPUTS ANALOG	SYSTEM INPUTS BINARY	SYSTEM INPUTS ANALOG	SYSTEM SOFTWARE/CONTROL ALARM PROCESSING	SYSTEM SOFTWARE/CONTROL APPLICATION/FUNCTION	REMARKS
Return air Temperature	AI-1	RAT								
Return Air Flow (cfm)	AI-3	RAF								
Mixed Air Temperature	AI-4	MAT								
Pre-Heat Temperature	AI-5	PHT								
Cooiling Coil Temperature	AI-6	CCT								
Discharge Air Temperature	AI-7	DAT								
Discharge Static Pressure	AI-8	DASP								
Supply Air Flow (cfm)	AI-10	SAF								
OUTSIDE AIR TEMPERATURE	AI-11	OAT								
RETURN LOW PRESSURE	BI-1	RLP								
RETURN FAN STATUS	BI-2	RF-STS								
SUPPLY FAN STATUS	BI-3	SF-STS								
MIXED AIR LOW LIMIT	BI-4	TSL-1								
STATIC PRESSURE HIGH LIMIT	BI-5	SPS-2								
SUPPLY FAN VSMC ALARM	BI-7	SF-ALA								
RETURN FAN VSMC ALARM	BI-8	RF-ALA								
RETURN FAN VSMC	AO-1	RF-SPD								FULL COMMUNICATION
SUPPLY FAN VSMC	AO-2	SF-SPD								FULL COMMUNICATION
OUTSIDE AIR DAMPER	AO-3	OAD								
RETURN AIR DAMPER	AO-4	RAD								
EXHAUST AIR DAMPER	AO-5	EAD								
MINIMUM OUTSIDE AIR DAMPER	AO-7	MIN-OAD								
PRE-HEAT VALVE V-2	AO-8	PHT-V1								
COILING VALVE V-1	AO-9	CLG-V1								
STEAM HUMIDIFIER VALVE V-4	AO-10	HUM-V4								
RETURN FAN START/STOP	BO-1	RF-SST								
SUPPLY FAN START/STOP	BO-2	SF-SST								
STEAM ISOLATION VALVE V-3	BO-3	HUM-ISO-V3								

4 POINTS LIST FOR VAV AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR

22-AHU-1

CONTROLS SYMBOLS

T	ROOM THERMOSTAT/TRANSMITTER – WALL MOUNT
M	ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER – WALL MOUNT
TT	TEMPERATURE TRANSMITTER
TT	TEMPERATURE TRANSMITTER, AVERAGING ELEMENT
MT	MOISTURE (HUMIDITY) TRANSMITTER
PT	PRESSURE TRANSMITTER
SPS	STATIC PRESSURE SENSOR
FT	FLOW TRANSMITTER
IT	CURRENT TRANSMITTER
CT	CONDUCTIVITY TRANSMITTER
SD	SMOKE DETECTOR
PDT	PRESSURE DIFFERENTIAL TRANSMITTER
PDS	PRESSURE DIFFERENTIAL SWITCH
HS	HAND SWITCH (HAND-OFF-AUTO SWITCH)
ZC	VALVE OR DAMPER POSITION CONTROLLER
KR	LOCAL RECORDING TIME CLOCK (RUNTIME)
TSL	TEMPERATURE SWITCH, LOW (FREEZESTAT)
TSH	TEMPERATURE SWITCH, HIGH (FREEZESTAT)
LC	LEVEL CONTROLLER
LT	LEVEL TRANSMITTER
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
EPT	ELECTRONIC TO PNEUMATIC TRANSDUCER
DPHL	DEWPOINT HIGH LIMIT
LTCP	LOCAL TEMPERATURE CONTROL PANEL
HVAC	HVAC CONTROL PANEL
VSMC	VARIABLE SPEED MOTOR CONTROLLER
ECC	INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT ENERGY CONTROL CENTER
TC	TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION
PC	PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION
SC	SPEED CONTROLLER. SEE SEQUENCE OF OPERATION
FC	FLOW CONTROLLER. SEE SEQUENCE OF OPERATION
FSH	FLOW SWITCH HIGH
FSL	FLOW SWITCH LOW
KC	TIME CLOCK CONTROLLING EQUIPMENT ON A SCHEDULE
	TEMPERATURE SENSING ELEMENT FOR TRANSMITTING TEMPERATURE TO EMCS (PROVIDE 12 INCHES [200mm] MINIMUM LENGTH IN DUCT WHEN SPACE PERMITS.)
A	SENSOR WITH AVERAGING ELEMENT TO TRANSMIT TEMPERATURE TO EMCS
	MOTOR STARTER
M	ELECTRIC OPERATED CONTROL DAMPER/OR VALVE

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: MECHANICAL CONTROL NOTES AND LEGEND

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: RR

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **22-M8.01**

Dwg. **30** of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

PLUMBING ABBREVIATIONS

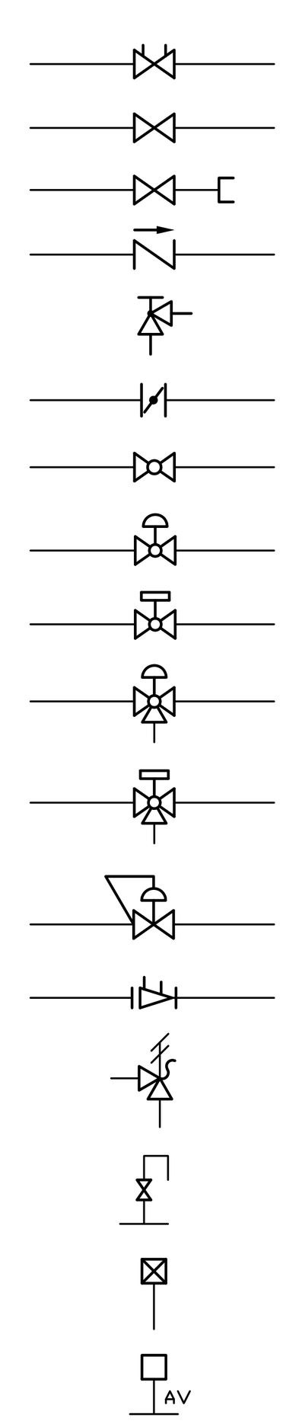
A/E	ARCHITECT / ENGINEER
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AG	AIR GAP
AP	ACCESS PANEL
AS	AUTOMATIC SPRINKLER
ASD	ADJUSTABLE SPEED DRIVES
ASD	AUTOMATIC SPRINKLER DRAIN
ASHRAE	AMERICAN SOCIETY HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY PLUMBING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
AV	ACID VENT
AW	ACID WASTE
BFP	PRESSURE BACKFLOW PREVENTER
BHP	BREAK HORSEPOWER
BSP	BLACK STEEL PIPE
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CELSIUS
CGA	COMPRESSED GAS ASSOCIATION
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
CV	CONTROL VALVE
(D)	DEMOLISH AND REMOVE
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DHWR	DOMESTIC WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DI	DEIONIZED WATER
DN	DOWN
DOE	DEPARTMENT OF ENERGY
DS	DOWNSPOUT
DT	DRAIN TILE
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWR	DRINKING WATER RETURN
DWS	DRINKING WATER SUPPLY
DWV	DRAIN WASTE VENT
(E)	EXISTING TO REMAIN
EL	ELEVATION
EMCS	ENERGY MONOSERRAT AND CENTRAL SYSTEM
EPA	ENVIROMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESC	ESCUTCHEON
ESH	EMERGENCY SHOWER
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWS	EYE WASH STATION
EX	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FCW	FILTERED COLD WATER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT (HOSE) CONNECTION
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FS	FLOOR SINK
FS	FLOW SWITCH
FU	FIXTURE UNITS
GAL	GALLON
GCO	GRADE CLEANOUTS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GRS	GAS REGULATOR STATION
GT	GREASE TRAP
GVTR	GAS VENT THROUGH ROOF
GWH	GAS FIRED WATER HEATER
H&CW	HOT AND COLD WATER
HB	HOSE BIBB
HD	HUB DRAIN
HEX	HEAT EXCHANGER
HP	HORSEPOWER
HS	HAND SINK
HST	HOT WATER STORAGE TANK (DOMESTIC)
HWB	HOT WATER BOILER
HWCP	HOT WATER CIRCULATING PUMP
HWP	HOT WATER PUMP
HYD	HYDRANT
ICW	INDUSTRIAL COLD WATER
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IRW	IRRIGATION WATER
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HEATER
IWR	INDUSTRIAL WATER RETURN
IWS	INDUSTRIAL WATER SUPPLY
KW	KILOWATT
KWHR	KILOWATT-HOUR
L/S	LITER PER SECOND
LA	LABORATORY AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER
LHWR	LABORATORY HOT WATER RETURN
LNG	LIQUID NATURAL GAS
LOX	LIQUID OXYGEN
LV	LABORATORY VACUUM
LW	LABORATORY WASTE
LWV	LABORATORY WASTE VENT
M	METER
MA	MEDICAL AIR
MAV	MANUAL AIR VENT
MBH	1000 BTUH
MED	MEDICAL
MER	MECHANICAL EQUIPMENT ROOM
MH	MANHOLE
MOU	MEMORANDUM OF UNDERSTADING
MSB	MOP SERVICE BASIN
MV	MEDICAL VACUUM
(N)	NEW, NEW WORK
N2	NITROGEN
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM.	NOMINAL
NPW	NON POTABLE WATER
NTC	NOT TO SCALE
O2	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OR	OPERATING ROOM
OVFL	OVERFLOW
PA	PASCAL
PD	PRESSURE DROP OR DIFFERENCE
PDI	PLUMBING AND DRAINAGE INSTITUTE
PG	PRESSURE GAGE
PP	PLUMBING PUMP
PPM	PARTS PER MILLION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PW	POTABLE WATER
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RL	ROOF LEADER
RO	REVERSE OSMOSIS WATER
RWL	RAIN WATER LEADER
SAN	SANITARY SEWER
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SCFM	STANDARD CUBIC FOOT/MINUTE
SCW	SOFTENED COLD WATER
SDMH	STORM DRAIN MANHOLE
SP	SUMP PUMP
SPR	SPRINKLER LINE
SQFT	SQUARE FEET
SS	STAINLESS STEEL
ST	STORAGE TANK
SW	STORM WATER
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TD	TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TSTAT	THERMOSTAT
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TYP	TYPICAL
UPC	UNIFORM PLUMBING CODE
UR	URINAL
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VCO	VACUUM CLEANER OUTLET
VP	VACUUM PUMP
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WALL HYDRANT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTER
WL	WATER LINE
WM	WATER METER
WPD	WATER PRESSURE DROP
WS	WASTE STACK
YCO	YARD CLEANOUT
YH	YARD HYDRANT

NOTE:
ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE INDICATED ON THE DRAWINGS.

PLUMBING PIPING SYMBOLS

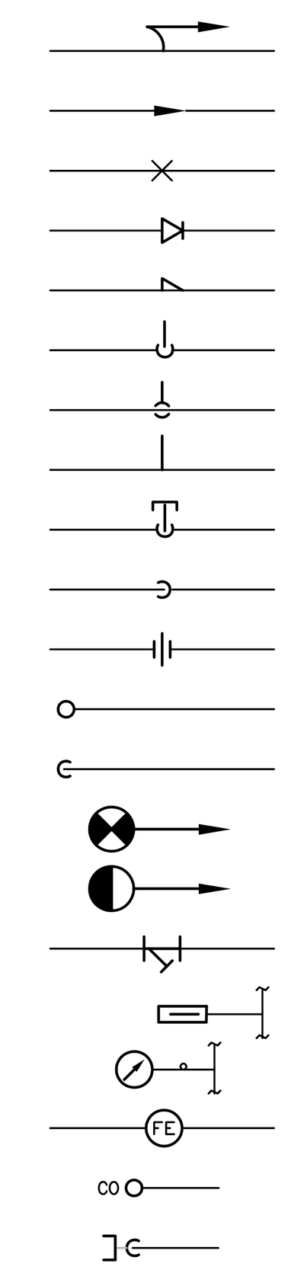
Symbol	Description
////////////	EXISTING TO BE REMOVED
— - - — - - —	EXISTING TO REMAIN
—DCW——DCW—	DOMESTIC COLD WATER, COLD WATER
—DHW——DHW—	DOMESTIC HOT WATER, HOT WATER
—DHWR——DHWR—	DOMESTIC HOW WATER RETURN, HOT WATER RETURN
— MA —— MA —	MEDICAL AIR
— MV —— MV —	MEDICAL VACUUM
— LA —— LA —	LABORATORY AIR
— LV —— LV —	LABORATORY VACUUM
— OA —— OA —	ORAL EVACUATION
--- IA --------- IA ---	INDUSTRIAL AIR
— D —— D —	DRAIN
—SAN——SAN—	SANITARY SEWER
— SS —— SS —	SANITARY SEWER (OPTIONAL)
—SAN— — —SAN—	SANITARY SEWER, BELOW GRADE
------------------	SANITARY VENT
— SD —— SD —	STORM WATER
— SD — — — SD —	STORM WATER, BELOW GRADE
— DT — — — DT —	PERIMETER OR UNDERSLAB DRAIN TILE
—SCW——SCW—	SOFTEN COLD WATER
—FCW——FCW—	FILTERED COLD WATER
—ROS——ROS—	REVERSE OSMOSIS WATER SUPPLY
—ROR——ROR—	REVERSE OSMOSIS WATER RETURN
—TWS——TWS—	TEMPERED WATER SUPPLY
—TWR——TWR—	TEMPERED WATER RETURN
—N2O——N2O—	NITROUS OXIDE
— 0 —— 0 —	OXYGEN
— N2 —— N2 —	NITROGEN
— NG —— NG —	NATURAL GAS
--- NG --------- NG ---	NATURAL GAS, BELOW GRADE
— LW —— LW —	LABORATORY WASTE
— LW — — — LW —	LABORATORY WASTE BELOW GRADE
---LWV---------LWV---	LABORATORY WASTE VENT

PLUMBING VALVE SYMBOLS



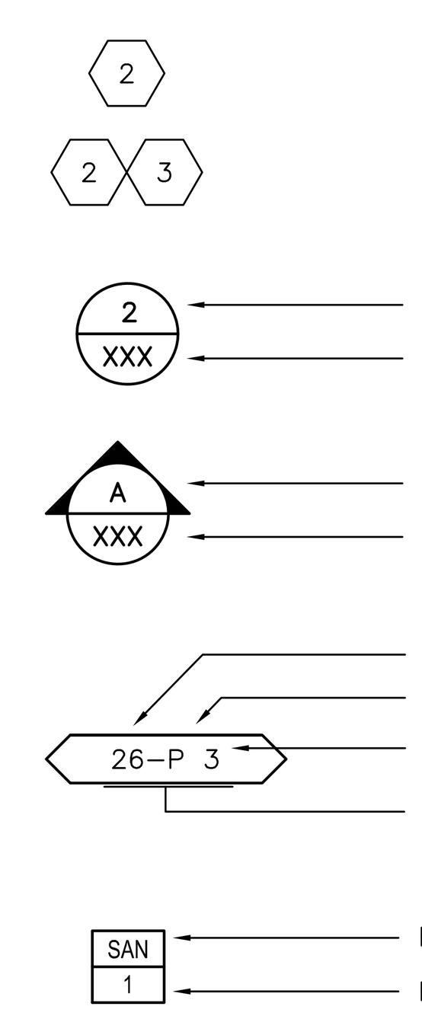
- BALANCING VALVE
- GATE VALVE (ISOLATION VALVE)
- GATE VALVE WITH 3/4 " HOSE ADAPTER
- CHECK VALVE
- ANGLE GLOBE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- MODULATING CONTROL VALVE
- TWO POSITION CONTROL VALVE
- THREE-WAY MODULATING CONTROL VALVE
- THREE-WAY TWO POSITION CONTROL VALVE
- PRESSURE REGULATING VALVE
- AUTOMATIC FLOW CONTROL VALVE
- PRESSURE RELIEF VALVE
- MANUAL AIR VENT
- TEST PLUG (PRESSURE/TEMPERATURE)
- AUTOMATIC AIR VENT

GENERAL PLUMBING SYMBOLS



- DIRECTION OF PIPE PITCH (DOWN)
- DIRECTION OF FLOW
- ANCHOR
- REDUCER OR INCREASER
- ECCENTRIC REDUCER
- TOP CONNECTION, 45° OR 90°
- BOTTOM CONNECTION, 45° OR 90°
- SIDE CONNECTION
- CAPPED OUTLET
- RISE OR DROP IN PIPE
- UNION
- PIPE UP
- PIPE DOWN
- POINT OF CONNECTION TO EXISTING WORK
- LIMIT OF DEMOLITION
- STRAINER
- THERMOMETER
- PRESSURE GAGE
- FLOW ELEMENT
- CLEAN OUT
- HOSE BIB

DRAWING SYMBOLS



- KEY NOTE SYMBOL
- MULTIPLE KEY NOTES APPLYING TO THE SAME ITEM
- DETAIL NUMBER
- DRAWING NUMBER WHERE DRAWN
- SECTION LETTER
- DRAWING NUMBER WHERE SHOWN
- BUILDING NO. WHERE EQUIPMENT IS LOCATED.
- EQUIPMENT ABBREVIATION (PUMP)
- PUMP NO. 3 IN BUILDING NO. 26
- TYPICAL UNIT NO.
- PIPE SYSTEM
- RISER NUMBER

GENERAL NOTES

GENERAL

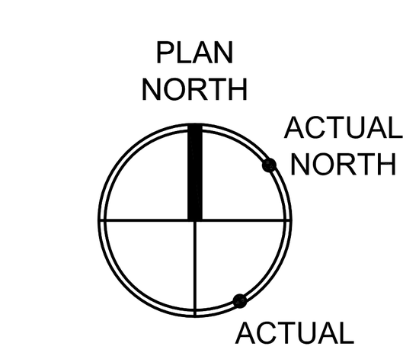
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, INVERTS, PIPE SIZES AND MATERIALS, FLUID FLOW DIRECTION(S) AND CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO BEGINNING INSTALLATION OR FABRICATION WORK. (DO NOT SCALE DRAWINGS).
2. THE LOCATIONS OF ALL UNDERGROUND PUBLIC AND PRIVATE UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR THEREFORE THE PROJECT AREA AFFECTED MUST BE FULLY INVESTIGATED PRIOR TO EXCAVATION/CONSTRUCTION. THE CONTRACTOR SHALL ENLIST THE ASSISTANCE OF THE OWNER TO OBTAIN THEIR OPINION AS TO THE LOCATIONS OF UNDERGROUND UTILITIES THAT MAY EXIST WITHIN THE CONSTRUCTION AREA.
3. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES EVEN IF THE UTILITIES ARE NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL REPAIR ALL DAMAGES AT THEIR OWN EXPENSE AND WILL BE RESPONSIBLE FOR ANY ADDITIONAL DAMAGES CAUSED BY A SYSTEM BEING DOWN.
4. THIS INSTALLATION WILL CONFORM TO ALL CODES AND THE REQUIREMENTS OF FEDERAL, STATE, AND LOCAL REGULATORY AGENCIES HAVING JURISDICTION.
5. INSTALL ALL PRODUCTS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, CONTRACT DOCUMENTS AND THE APPLICABLE CODES, STANDARDS AND REGULATIONS.
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT ALL RULES AND REGULATIONS, INCLUDING THOSE WHICH MAY BE ISSUED BY THE OWNER, ARE BEING OBSERVED, PARTICULARLY WORKPLACE SAFETY AND THE CONDUCT OF ALL THOSE EMPLOYED DIRECTLY AND INDIRECTLY BY HIM ON THE PREMISES, AND THE OWNER'S EMPLOYEES WHO MAY BE IMPACTED OR AFFECTED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL INSTALL SIGNAGE, TEMPORARY FENCES, BARRIERS, AND OTHER MEANS TO PROVIDE WARNING AND PERSONNEL SAFETY. PLACEMENT OF THESE ITEMS WILL BE COORDINATED WITH THE OWNER AND HIS ONGOING OPERATIONS AND WILL PROMPTLY BE REVISED WHEN WORK IN A PARTICULAR AREA HAS BEEN COMPLETED.
7. ALL WORK WILL BE LAWFULLY EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND WILL BE DONE IN ACCORDANCE WITH THE GOVERNING CODES, INDUSTRY STANDARDS AND IN CONFORMANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
8. WORK UNDER THIS CONTRACT SHALL CONSIST OF THE CONTRACTOR PROVIDING ALL LABOR, MATERIALS, AND SERVICES, INCLUDING WORK NOT SPECIFICALLY SHOWN BUT REASONABLY IMPLIED.
9. WORK ALL DRAWINGS WITH THE PROJECT SPECIFICATIONS.
10. PIPING RISING WITHIN A STORY IS DESIGNATED AS "RISE". PIPING RISING TO ANOTHER STORY IS NOTED AS "UP". PIPING DROPPING WITHIN A STORY IS NOTED AS "DROP". PIPING DROPPING TO ANOTHER STORY IS NOTED AS "DN".

PLUMBING NOTES

1. ALL PIPING MATERIALS AND COMPONENTS INCLUDING FITTINGS, PIPE, FLANGES, VALVES, ETC. SHALL BE DESIGNATED, FABRICATED AND INSTALLED PER THE APPROPRIATE SECTIONS OF THE LATEST CODES, VETERAN'S AFFAIRS PLUMBING STANDARDS AND PROJECT CONTRACT DOCUMENTS.
2. ALL SANITARY SEWERS 3" AND SMALLER SHALL SLOPE 1/4" PER FOOT (MIN), ALL SANITARY SEWERS 4" AND LARGER SHALL SLOPE 1/8" PER FOOT (MIN.) IN THE DIRECTION OF FLOW.
3. ALL HORIZONTALLY ROUTED WASTE VENTS SHALL BE INSTALLED WITH A SLOPE TO FACILITATE GRAVITY DRAINAGE TO THE WASTE SYSTEM.
4. ALL CLEANOUTS INSTALLED IN THE SEWER SYSTEM SHALL BE SIZED AS FOLLOWS:

PIPE SIZE	SIZE OF CLEANOUT
2"	2"
2 1/2"	2 1/2"
3"	3"
4-6"	4"

5. CLEANOUTS INSTALLED IN HORIZONTAL DRAINAGE PIPING SHALL BE SPACED AT INTERVALS NOT EXCEEDING 100'.
6. THE MAXIMUM VERTICAL DISTANCE FROM THE FIXTURE OUTLET (LAVATORY, FLOOR DRAIN ETC.) TO THE TRAP WEIR SHALL BE 24".
7. SURFACES TO BE SOLDERED SHALL BE CLEANED BRIGHT. THE JOINTS SHALL BE PROPERLY FLUXED AND MADE WITH APPROVED SOLDER. SOLDER JOINTS FOR POTABLE WATER SHALL BE MADE WITH A SOLDER CONTAINING NOT MORE THAN 0.2 PERCENT LEAD.
8. UNIONS SHALL BE INSTALLED AT ALL EQUIPMENT. THE USE OF DIELECTRIC UNIONS AND FLANGES MUST BE INSTALLED IN AREAS WHERE JOINING OF DISSIMILAR METALS (ie CARBON STEEL TO COPPER OR BRONZE, ETC.) THIS IS TO FACILITATE PIPING REMOVAL AND REASSEMBLY FOR FUTURE MAINTENANCE WORK AND/OR PREVENT GALVANIC CORROSION.
9. CONTRACTOR SHALL PROPERLY BRACE, ANCHOR, AND SUPPORT ALL PIPING, VALVES ETC. IN ACCORDANCE WITH MSS SP-58.
10. PIPE SUPPORT SPACING SHALL BE IN ACCORDANCE WITH MSS-58.
11. ALL POTABLE WATER BRANCHES SHALL BE INSTALLED WITH ISOLATION VALVES CLOSE TO MAIN.
12. ALL PLUMBING FIXTURES SHALL BE PROVIDED WITH WATER ISOLATION VALVES.
13. CONTRACTOR SHALL PROVIDE WALL ACCESS COVERS TO ALL CLEANOUTS AND VALVES LOCATED WITHIN WALLS.
14. ALL WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES SHALL BE PROTECTED IN ACCORDANCE WITH VETERAN'S AFFAIRS STANDARDS.
15. ALL PIPES OR TUBING WHICH PASS THROUGH RATED AND NON-RATED WALLS, FLOORS AND FOUNDATION WALLS, SHALL PASS THROUGH A SCHEDULE 40 CARBON STEEL PIPE SLEEVE. SLEEVES WHICH PASS THROUGH MASONRY SHALL BE GALVANIZED COATED. ALL SLEEVES SHALL BE INSTALLED FLUSH ON BOTH SIDES OF WALL PENETRATION.
    NON-RATED WALLS: THE SLEEVE SHALL BE SIZED TO ALLOW FREE PASSAGE OF INSULATED AND NON-INSULATED PIPES AND TUBING.
    RATED WALLS: PIPES WHICH PASS THROUGH FIRE-RATED WALLS & FLOOR SHALL USE THE APPROPRIATE CODE APPROVED, TESTED AND INSTALLATION METHOD OF SEALING WHILE MAINTAINING THE INTEGRITY OF THE WALL'S FIRE RATING(S).
    EXTENSION WALLS & FOUNDATION: PIPES WHICH PASS THROUGH EXTENSION WALLS OR FOUNDATION WALLS SHALL BE SEALED AND MADE WEATHER-TIGHT.
16. INSULATE COLD AND HOT WATER PIPING PER THE PROJECT DOCUMENTS WITH FIRE RETARDANT VAPOR BARRIER JACKET. PIPE INSULATION SHALL BE SEALED WITH A FIRE RESISTIVE ADHESIVE.
17. CONTRACTOR IS RESPONSIBLE FOR ALL TESTING AND COORDINATION OF INSPECTIONS OF THE ENTIRE POTABLE WATER, SANITARY SEWER AND VENT SYSTEMS. TESTING SHALL BE IN ACCORDANCE WITH THE VETERAN'S AFFAIRS STANDARDS AND THE INTERNATIONAL PLUMBING CODE.
18. ALL PIPING AND VALVES SHALL BE PROPERLY IDENTIFIED, LABELED AND TAGGED.
19. CONTRACTOR SHALL FLUSH AND DISINFECT THE ENTIRE POTABLE WATER SYSTEM. FLUSHING AND DISINFECTION OF THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH THE VETERAN'S AFFAIRS STANDARDS AND THE INTERNATIONAL PLUMBING CODE.
20. PROVIDE THREE (3) ELBOW SWING JOINTS FOR ALL DOMESTIC HOT WATER CONNECTIONS TO THE MAIN.
21. CONTRACTOR SHALL PROVIDE AND INSTALL THERMAL EXPANSION/CONTRACTION COMPENSATION IN THE DOMESTIC HOT WATER AND RECIRCULATION SYSTEMS, LIMITING THE MAXIMUM MOVEMENT TO 1 1/2" OR LESS. ANCHORS & RESTRAINTS SHALL BE INSTALLED WHERE NECESSARY AND ADJACENT FIRE RATED WALLS AND FLOORS. ALL PIPES SHALL BE PROPERLY GUIDED INTO THE THERMAL EXPANSION LOOPS OR COMPENSATORS.



CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Architecture Planning Design
120 Sanhican Drive
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Drawing Title: PLUMBING SYMBOLS, ABBRVIATIONS AND NOTES

Approved: Project Director

Project Title: LEBANON - EMERGENCY CACHE

Location: 1700 SOUTH LINCOLN AVENUE, LEBANON PA, 17042

Date: 04-10-2013 | Checked: MP | Drawn: PD

Project Number: VA595-11-127

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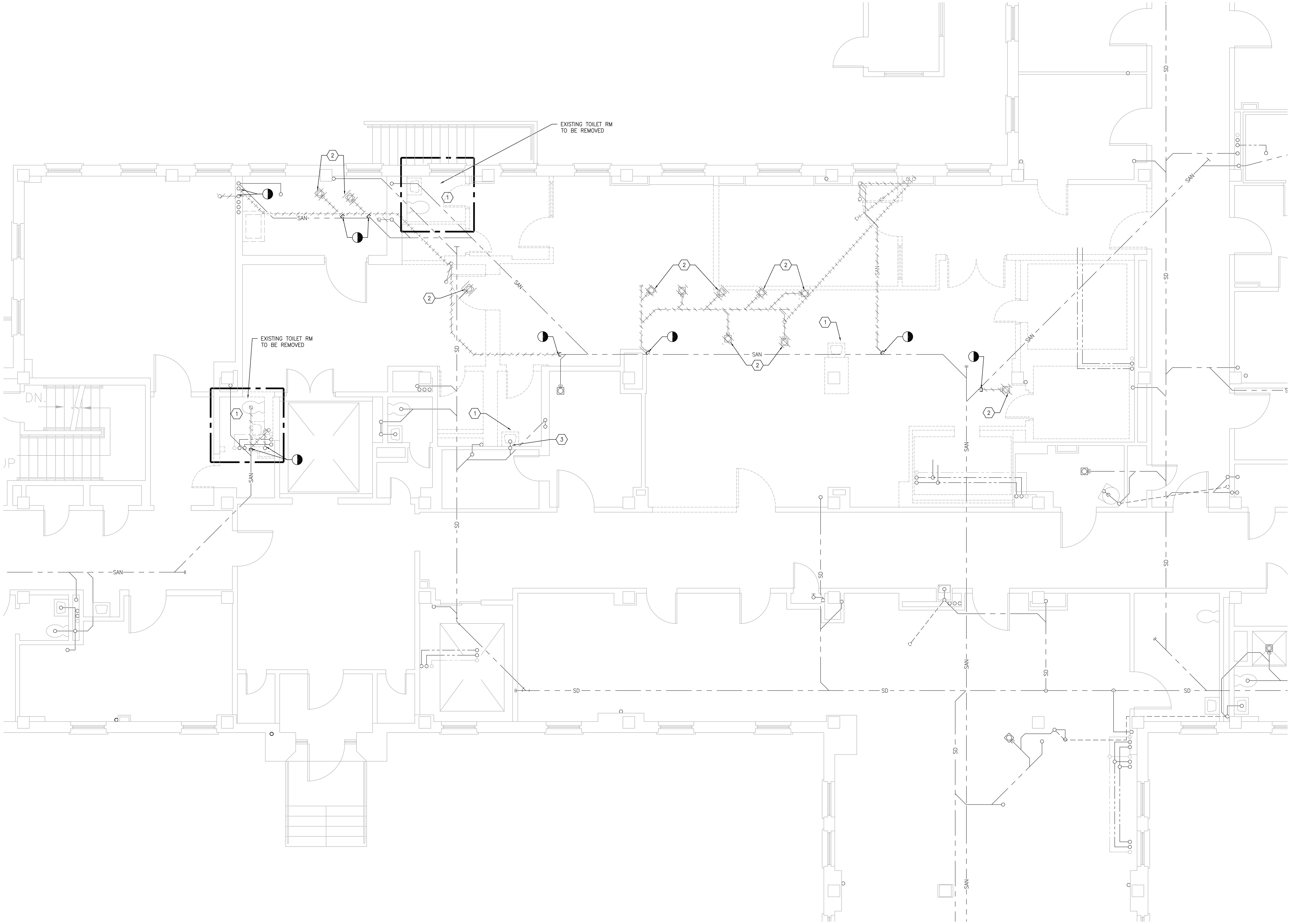
Department of Veterans Affairs



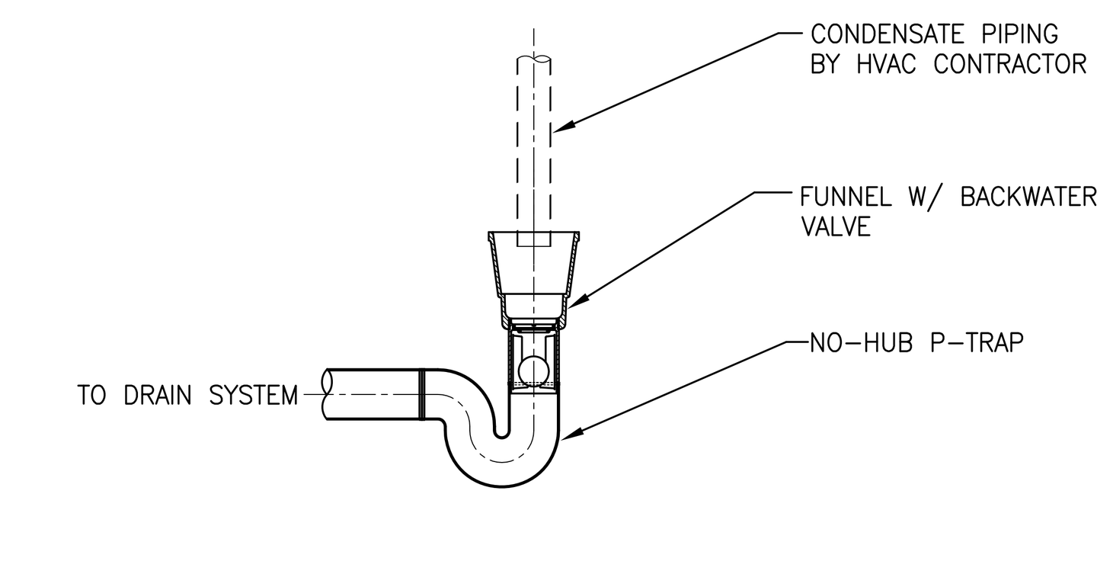
1 BLDG 19: FIRST FLOOR PLUMBING DEMO PLAN
SCALE: 1/4" – 1'–0"

GENERAL SHEET NOTES:

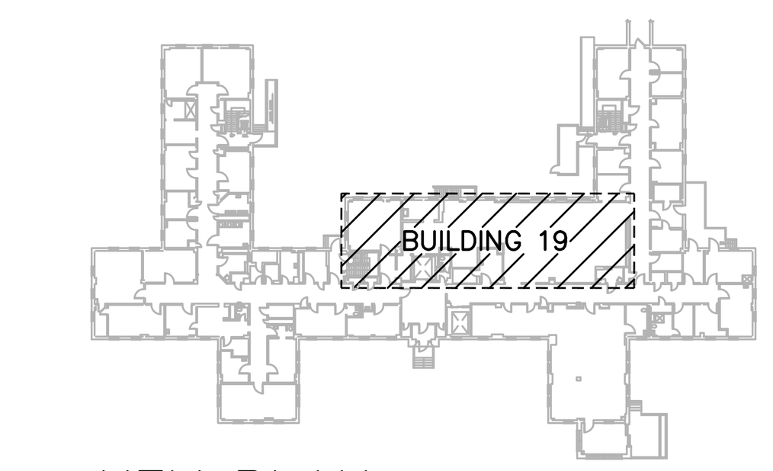
1. REFER TO DRAWING PL0.01 FOR GENERAL NOTES, SYSMBOLS AND ABBREVIATIONS.

SHEET KEYNOTES:

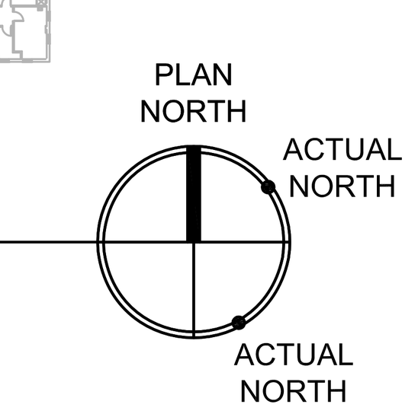
1. ALL EXISTING PLUMBING FIXTURES AND ASSOCIATED PIPING AND SUPPORTS TO BE REMOVED. CAP PIPING BRANCH TO REMAIN BACK AT MAIN OR STACK.
2. EXISTING FLOOR DRAIN TO BE REMOVED. CAP BRANCH PIPING TO REMAIN BACK AT MAIN AND REPAIR FLOOR AS REQUIRED FOR NEW FINISH.
3. EXISTING SERVICE SINK TO BE REMOVED AND DRAIN LINE IN PIPE BASEMENT TO BE REPLACED WITH 2" OPEN–HUB DRAIN WITH TRAP FOR HVAC CONDENSATE WASTE. REFER TO DETAIL 2 / PD1.01.



2 CONDENSATE DRAIN DETAIL
SCALE: NONE



KEY PLAN
NOT TO SCALE



CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER NO. PE044043R

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Dwg. 32 of 47

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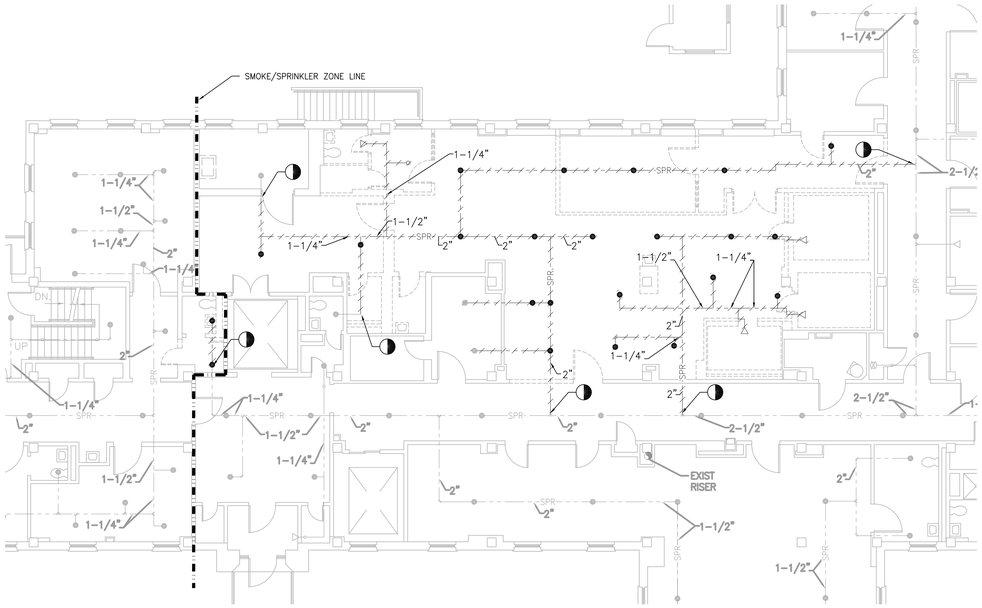
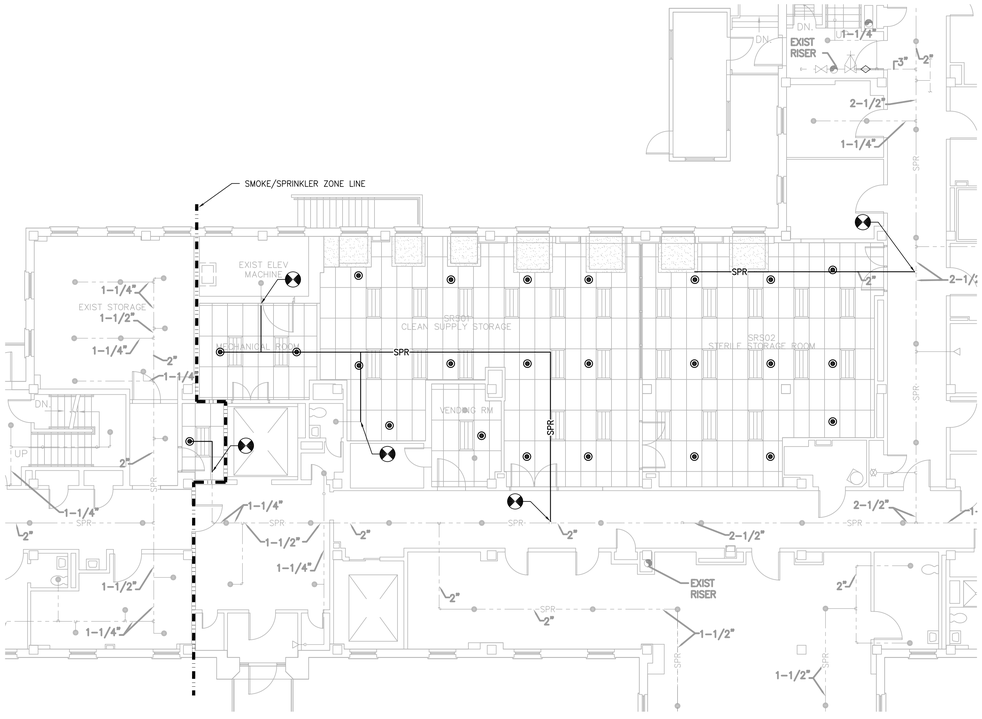


1 BLDG 19: FIRE SPRINKLER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

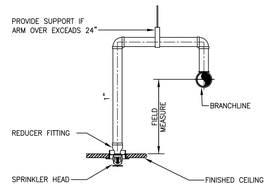


2 BLDG 19: NEW FIRE SPRINKLER PLAN
SCALE: 1/8" = 1'-0"

LEGEND

	EXISTING PIPING
	EXISTING TO BE REMOVED
F	SPRINKLER PIPING
SPR	FIRE PIPING
	WATERFLOW SWITCH
	CHECK VALVE
	OS&Y (OR INDICATING TYPE) VALVE
	INSPECTORS TEST FITTING
	PRESSURE GAUGE
	GROUND FACE UNION OR FLANGES
	UPRIGHT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	RECESSED PENDENT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	POINT OF CONNECTION TO EXISTING
	LIMIT OF DEMOLITION

ABV	ABOVE
ASSY	ASSEMBLY
BLW	BELOW
CLG	CEILING
EXIST	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FLR	FLOOR
SPR	SPRINKLER



3 TYPICAL PENDANT SPRINKLER DETAIL
SCALE: NONE

GENERAL NOTES

1. FIRE PROTECTION SPRINKLER INSTALLATION SHALL MEET THE REQUIREMENTS OF THE FOLLOWING:
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   B. LOCAL AND STATE REGULATIONS AND IBC 2009
   C. DVA FIRE PROTECTION MANUAL; SIXTH ED.; REVISED SEPTEMBER 2011
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3. SPRINKLERS THROUGHOUT THE BUILDING TO BE ORDINARY TEMPERATURE RATED EXCEPT FOR ELECTRICAL ROOMS/CLOSETS SHALL BE INTERMEDIATE TEMPERATURE RATED AND MECHANICAL ROOMS TO BE PROVIDED WITH HIGH TEMPERATURE RATED HEADS.
4. SPRINKLER PIPE SIZES AND SPRINKLER HEAD LOCATIONS SHALL CONFORM TO NFPA REQUIREMENTS.
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7. ALL SPRINKLER PIPE TO MAINTAIN A 6'-0" MIN VERTICAL CLEARANCE FROM TOP OF ELECTRICAL CONTROL PANELS & SWITCHGEAR/TRANFORMERS.
8. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE THE QUANTITY OF SPRINKLER HEADS AS REQUIRED TO MAINTAIN THE MINIMUM COVERAGE REQUIRED BY NFPA 13 IS ALL AREAS THE BUILDING.
9. COORDINATE COLOR OF SPRINKLER HEAD COVER PLATES WITH CEILINGS THROUGHOUT PROJECT. MATCH CEILING COLOR AS REQUIRED.
10. COORDINATE THE EXACT LOCATION OF ALL SPRINKLER HEADS, PIPING, EQUIPMENT, AND DEVISES WITH ARCHITECTURAL DRAWINGS AND THE RESPECTIVE DRAWINGS OF PIPING, DUCTWORK, DIFFUSERS, BEAMS, LIGHTS, ETC. THIS CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF THESE COMPONENTS IN THE FIELD.
11. PROVIDE COMPLETE AND FUNCTIONAL FIRE PROTECTION SYSTEMS FOR THE PROJECT. THE SYSTEMS SHALL CONFORM TO THE SPECIFICATIONS AND AS SHOWN ON DRAWINGS. ITEMS OR WORK NOT SHOWN OR SPECIFIED, BUT REQUIRED FOR COMPLETE SYSTEMS, SHALL BE PROVIDED AND CONFORM TO ACCEPTED TRADE PRACTICES. THE DRAWINGS AND SPECIFICATIONS ARE PRESENTED TO DEFINE SPECIFIC SYSTEM REQUIREMENTS AND SERVE TO EXPAND ON THE PRIMARY CONTRACT REQUIREMENTS OF PROVIDING COMPLETE SYSTEMS. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT AND ROUTING OF THE SYSTEMS INCLUDED IN THIS CONTRACTORS WORK.
12. THESE DRAWINGS WERE PREPARED FROM INFORMATION TAKEN FROM THE ORIGINAL BUILDING DRAWINGS AND FIELD SURVEY INFORMATION COMPILED BY THE ENGINEERING DESIGN TEAM FOR THE PURPOSE OF ENGINEERING DESIGN CONCEPT. EXISTING CONDITIONS ARE SHOWN AS ACCURATELY AS POSSIBLE. THERE IS THE POSSIBILITY THAT CONDITIONS SHOWN ARE NOT EXACTLY AS EXISTING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, LOCATIONS, SIZES AND CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO BEGINNING INSTALLATION OR FABRICATION WORK.
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14. CONTRACTOR SHALL MAKE ALL NECESSARY SUBMISSIONS AND OBTAIN ALL NECESSARY PERMITS AND APPROVALS PRIOR TO STARTING FABRICATION AND CONSTRUCTION.

FIRE PROTECTION DESIGN CRITERIA

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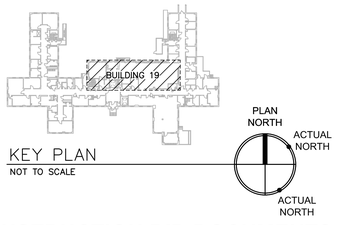
3. PROVIDE FOR AN ADDITIONAL WATER ALLOWANCE OF 100 GPM FOR INSIDE AND OUTSIDE HOSE STREAMS TO THE SPRINKLER HYDRAULIC REQUIREMENTS.
4. THE CALCULATED DEMAND INCLUDING HOSE STREAM REQUIREMENTS SHALL FALL NO LESS THAN 10 PERCENT BELOW THE AVAILABLE WATER SUPPLY.
5. SYSTEM SHALL BE DESIGNED ON A HYDRAULICALLY CALCULATED BASIS UTILIZING THE AREA DENSITY METHOD PER THE NFPA 13 BY THE SPRINKLER CONTRACTOR. CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF PENNSYLVANIA.
6. STANDPIPE SYSTEM TO BE SIZED TO MEET VOLUME REQUIREMENTS OF NFPA 14 BUT NOT PRESSURE REQUIREMENTS.
7. CONDUCT A NEW WATER SUPPLY FLOW PRESSURE TEST. SPRINKLER PIPE SIZES SHALL BE DETERMINED BY HYDRAULIC CALCULATIONS BASED ON THE RESULTS OF THIS TEST.



CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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SPIEZLE ARCHITECTURAL GROUP, INC.
Architecture Planning Design
120 Sanhican Drive
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MILLER-REMICK LLC
PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA REGISTERED ENGINEER

ARCHITECT/ENGINEERS:

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1010 KINGS HIGHWAY SOUTH
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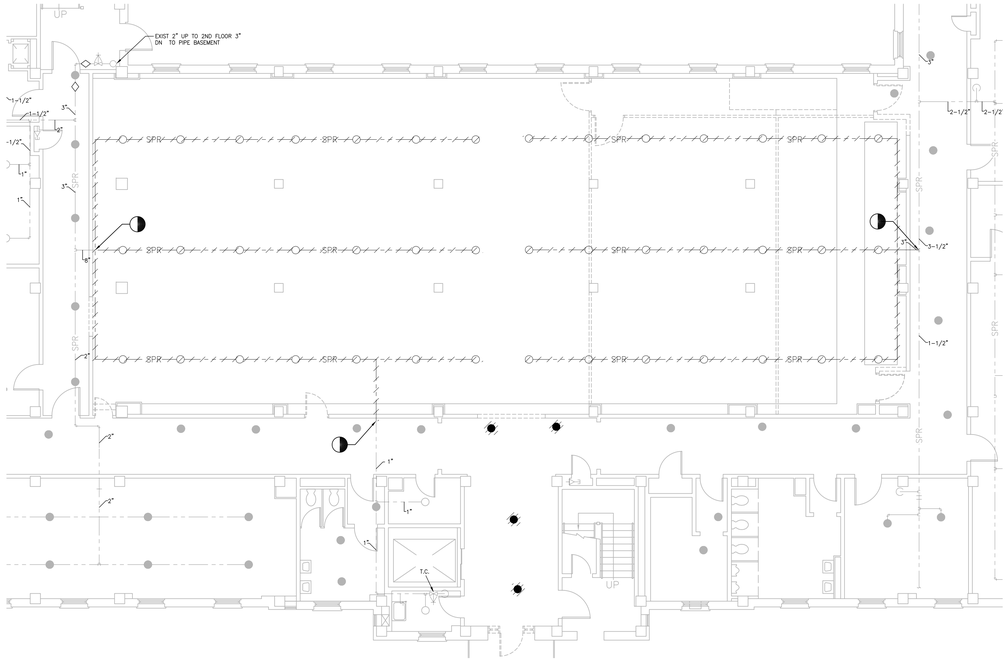
Drawing Title: BLDG 19: FIRE SPRINKLER PLAN
Approved: Project Director
Project Title: LEBANON - EMERGENCY CACHE
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013
Checked: MP
Drawn: PD
Project Number: VA595-11-127
Building Number: BLDGS. 19 & 22
Drawing Number: 19-FX1.01
Dwg. 33 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



1 BLDG 22: FIRE SPRINKLER DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

2 BLDG 22: NEW FIRE SPRINKLER PLAN
SCALE: 1/8" = 1'-0"

LEGEND

	EXISTING PIPING
	EXISTING TO BE REMOVED
F	SPRINKLER PIPING
SPR	FIRE PIPING
	WATERFLOW SWITCH
	CHECK VALVE
	OS&Y (OR INDICATING TYPE) VALVE
	INSPECTORS TEST FITTING
	PRESSURE GAUGE
	GROUND FACE UNION OR FLANGES
	UPRIGHT SPRINKLER HEAD
	PENDENT SPRINKLER HEAD
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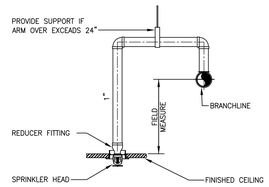

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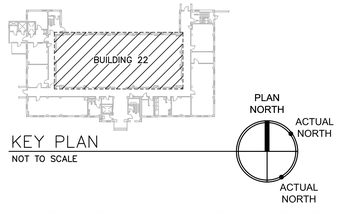

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FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

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FAX: (856)429-5002

Drawing Title: BLDG 22: FIRE SPRINKLER PLAN
Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013 | Checked: MP | Drawn: PD

Project Number: **VA595-11-127**
Building Number: BLDGS. 19 & 22
Drawing Number: **22-FX1.01**
Dwg.**34** of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

ELECTRICAL ABBREVIATIONS

1PH	SINGLE–PHASE
1P	SINGLE POLE
2/C	TWO–CONDUCTOR
3/C	THREE–CONDUCTOR
3PH	THREE–PHASE
4/C	FOUR–CONDUCTOR
4W	FOUR–WIRE
A/C UNIT	AIR CONDITIONING UNIT
A/E	ARCHITECT/ENGINEER
AAP	ALARM ANNUNCIATOR PANEL
AC	ALTERNATING CURRENT OR ARMORED CABLE
ACC	ACCESSIBLE
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJOINING
ADO	AUTOMATIC DOOR OPENER
AF	AMPERE FRAME OR AMP FUSE
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AMPERE HOUR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
AMB OR A	AMBIENT
AMP	AMPERE
ARCH	ARCHITECT
ASC	AMPS SHORT CIRCUIT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AV	AUDIO VISUAL
BAT	BATTERY
BC	BARE COPPER
BD	BOARD
BFF	BELOW FINISH FLOOR
BIL	BASIC INSULATION LEVEL
BLDG	BUILDING
BPIP	BOILER PLANT INSTRUMENTATION PANEL
BRKR	BREAKER
BYP	BY PASS
C	CONDUIT
CAB	CABINET
CALC	CALCULATE
CAP	CAPACITY
CAT	CATALOG
CATV	COMMUNITY ANTENNA TELEVISION
CCR	CONTROL CONTACTOR
CCTV	CLOSED CIRCUIT TELEVISION
cd	CANDELA
CD	CONSTRUCTION DOCUMENTS
CF	CONTRACTOR FURNISHED
CF/CI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED/OWNER INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CKT	CIRCUIT
CKT BRKR	CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COAX	COAX CABLE
COMM	COMMUNICATION
COMPT	COMPARTMENT
CONC	CONCRETE
CONT	CONTINUE
CONTR	CONTRACTOR
COORD	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
CU FT	CUBIC FEET
CUR	CURRENT
DB	DECIBEL OR DIRECT BURIAL
DC	DIRECT CURRENT
DCP	DIMMER CONTROL PANEL
DEG C	DEGREES CELSIUS
DEG F	DEGREES FAHRENHEIT
DEMO	DEMOLITION
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DISTR PNL	DISTRIBUTION PANEL
DMR SW	DIMMER SWITCH
DN	DOWN
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DRSW	DOOR SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
(E)	EXISTING TO REMAIN
EC	EMPTY CONDUIT
EG	EQUIPMENT GROUND
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMCP	EMERGENCY MONITORING CONTROL PANEL
EMER	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
EPRF	EXPLOSION PROOF
(ER)	EXISTING TO RELOCATE
ESMT	EASEMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FABL	FIRE ALARM BELL
FABX	FIRE ALARM BOX
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE
FI	FILM ILLUMINATOR
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
FLT	FLOODLIGHT
FLUOR	FLUORESCENT
FLUOR FIX	FLUORESCENT FIXTURE
FOUT	TELEPHONE FLOOR OUTLET
FP	FIRE PROTECTION
FT	FEET OR FOOT
FU SW	FUSED SWITCH
FVNR	FULL VOLTAGE NON–REVERSING
FVR	FULL VOLTAGE REVERSING
G OR GND	GROUND OR GENERATOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GTB	GROUND TERMINAL BOX
HID	HIGH INTENSITY DISCHARGE
HOA	HAND–OFF–AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
HZ	HERTZ
IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
IWH	INSTANTANEOUS WATER HEATER
J–BOX	JUNCTION BOX
kV	KILOVOLT
kVA	KILOVOLT AMPERE
kVAH	KILOVOLT AMPERE PER HOUR
kVAR	KILOVOLT AMPERE REACTIVE
kW	KILOWATT
kWH	KILOWATT HOUR
kWHM	KILOWATT HOUR METER
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET (FOOT)
LM	LUMEN
LP	LIGHT POLE
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LT	LIGHT
LTG	LIGHTING
LTG PNL	LIGHTING PANEL
LTNG	LIGHTNING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL–CLAD
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MLO	MAIN LUGS ONLY
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
MVA	MEGAVOLT–AMPERE
MW	MEGAWATT MICROWAVE
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT OR N	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NS	NO SCALE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OL	OVERLOAD
P	POLE
PA	PUBLIC ADDRESS
PB	PANELBOARD, PULL BOX, OR PUSHBUTTON
PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
PCB	POLYCHLORINATED BIPHENYL
PEC	PHOTOELECTRIC CELL
PED	PEDESTAL
PEND	PENDANT
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
POD	POWER OPERATED DAMPER
PT	POTENTIAL TRANSFORMER
PTRV	POWER TYPE ROOF VENTILATION
PVC	POLYVINYL CHLORIDE (PLASTIC)
PWR	POWER
(R)	REMOVE (DEMOLISH)
RCP	REFLECTED CEILING PLAN
(RE)	RELOCATED EXISTING
REC	RECESSED
RECPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT MEAN SQUARE
REQD	REQUIRED
SCC	SHORT CIRCUIT CAPACITY
SES	SERVICE ENTRANCE SECTION
SD	SMOKE DETECTOR
SF	SQUARE FOOT (FEET)
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEL	TELEPHONE
TP	TWISTED PAIR
TPS	TWISTED PAIR SHIELDED
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
V	VOLT
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VOLT	VOLTAGE
W	WATT
WH	WATER HEATER
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

ELECTRICAL SYMBOLS - DIAGRAM

- MOTOR, SINGLE–PHASE
- MOTOR, THREE–PHASE
- TRANSFORMER
- EARTH GROUND
- JUNCTION BOX
- PB — PULL BOX
- FUSE WITH RATING
- R 50 — RELAY
  50 = INSTANTANEOUS OVERCURRENT OR RATE–OF–RISE
  51 = AC–TIME OVERCURRENT
  67 = AC–DIRECTIONAL OVERCURRENT
  86 LOCKING OUT
- DISCONNECT SWITCH, FUSED
- DISCONNECT SWITCH, UNFUSED
- STARTER, COMBINATION WITH DISCONNECT SWITCH
- STARTER OR MOTOR CONTROLLER
- TC — TIME CLOCK
- T — TRANSFORMER, PLAN
- DUCT, UNDERFLOOR JUNCTION BOX
- C C — LADDER CABLE TRAY
- BRANCH CIRCUIT HOMERUN. LINES INDICATE NUMBER OF CIRCUITS, NEUTRAL, AND SWITCH LEG CONDUCTORS. ONE SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH HOMERUN; NOT SHOWN
- LIQUID TIGHT FLEXIBLE METAL CONDUIT
- FLOOR OUTLET, DATA COMMUNICATION
- D — OUTLET, DATA COMMUNICATION
- DP# — DISTRIBUTION PANEL
- LIGHTING PANEL
- PANELBOARD CABINET, FLUSH MOUNTED
- PANELBOARD CABINET, SURFACE MOUNTED
- C — RECEPTACLE, CLOCK HANGER
- RECEPTACLE, DUPLEX
- POKETHROUGH DEVICE WITH DUPLEX RECEPTACLE
- RECEPTACLE, DUPLEX ON EMERGENCY POWER
- RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER
- RECEPTACLE, QUADRAPLEX
- RECEPTACLE, SINGLE
- S — RECEPTACLE, SINGLE WITH SWITCH
- RECEPTACLE, SPECIAL PURPOSE
  A = 120V, 20A, 1 PHASE, 2–POLE, 3W, NEMA 5–20R.
  B = 208V, 20A, 1 PHASE, 2–POLE, 3W, NEMA 6–20R.
  C = 120V, 30A, 1 PHASE, 2–POLE, 3W, NEMA 5–30R.
  D = 208V, 30A, 1 PHASE, 2–POLE, 3W, NEMA 6–30R.
  E = 208V, 60A, 1 PHASE, 3–POLE, 4W, NEMA 14–60R.
  F = 208V, 30A, 3 PHASE, 3–POLE 4W, NEMA 15–30R.
  G = 208V, 50A, 3 PHASE, 3 POLE, 4W, NEMA 15–30R.
  H = 208V, 60A, 3 PHASE, 3 POLE, 4W, NEMA 15–60R.
- S — RECEPTACLE, SWITCHED DUPLEX
- ELECTRICAL STRIP MOLD (OUTLETS ON 2'–0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'–6" [1067mm] AFF OR AS INDICATED.
- 3–GANG COMPARTMENT BOX IN FLOOR FOR TELEPHONE, DATA & RECEPTACLE.
- VFD — VARIABLE FREQUENCY DRIVE
- S2 — SWITCH
  F = FUSED SWITCH
  L = LOCK
  M = MANUAL MOTOR STARTING
  MP= MOTOR SNAP WITH PILOT LIGHT (THERMAL TYPE)
  PB= PUSH BUTTON STATION
  WP= WEATHER PROOF
  K = KEY OPERATED
  LM= LOW VOLTAGE MASTER
  MC= MOMENTARY CONTACT
  P = WITH PILOT LIGHT
  RC= REMOTE CONTROL
  X = EXPLOSION PROOF
- T R L — REMOTE TESTING STATION FOR DUCT DETECTORS
  L = KEYED SWITCH

ELECTRICAL SYMBOLS - LIGHTING PLAN

- S2 — SWITCH
  BLANK = SINGLE POLE
  3 = THREE–WAY
  D = DIMMER
  LV= LOW VOLTAGE
  LM= LOW VOLTAGE MASTER
  PB= PUSH BUTTON STATION
  T = TIMER OPERATED
  X = EXPLOSION PROOF
  2 = DOUBLE POLE
  4 = FOUR–WAY
  K = KEY OPERATED
  L = LOCK
  P = WITH PILOT LIGHT
  RC= REMOTE CONTROL
  WP= WEATHER PROOF
  Mo= OCCUPANCY SENSOR
- GTD — GENERATOR TRANSFER DEVICE
- LIGHT FIXTURE CEILING MOUNTED
- A — LIGHT FIXTURE, RECESSED FLUORESCENT, 2'x4' [610x1220mm]; LETTER INDICATES TYPE.
- B — LIGHT FIXTURE, RECESSED FLUORESCENT, 1'x4' [305x1220mm]; LETTER INDICATES TYPE.
- A — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 2'x4' [610x1220mm]; LETTER INDICATES TYPE.
- B — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 1'x4' [305x1220mm]; LETTER INDICATES TYPE.
- D — LIGHT FIXTURE, FLUORESCENT EMERGENCY; LETTER INDICATES TYPE.
- E — LIGHT FIXTURE, RECESSED FLUORESCENT, 2'x2' [610x610mm]; LETTER INDICATES TYPE.
- E — LIGHT FIXTURE, SURFACE MOUNTED FLUORESCENT, 2'x2' [610x610mm]; LETTER INDICATES TYPE.
- LIGHT TRACK WITH HEADS AS SHOWN
- LIGHT FIXTURE, STRIP/INDUSTRIAL FLUORESCENT; LETTER INDICATES TYPE.
- H — LIGHT FIXTURE, WALL MOUNTED
- LIGHTING, ONE HEAD EMERGENCY BATTERY POWER
- LIGHTING, TWO HEAD EMERGENCY BATTERY POWER
- LIGHTING, THREE HEAD EMERGENCY BATTERY POWER
- LIGHTING, COMBINATION EXIT SIGN / TWO HEAD EMERGENCY BATTERY POWER
- EXIT SIGN, WALL MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN
- EXIT SIGN, CEILING MOUNTED WITH DIRECTIONAL ARROWS AND FACES AS SHOWN
- OS D — OCCUPANCY SENSOR
  D = DUAL TECH

COMMUNICATION SYMBOLS

- OUTLET, COMBINATION TELEPHONE/DATA COMMUNICATION
- POKETHROUGH DEVICE WITH COMBINATION TELE/DATA OUTLET
- J — OUTLET TELEPHONE; LETTER INDICATES AS FOLLOWS:
  J = JACK TYPE W = WALL TYPE
- OUTLET DATA ONLY
- OUTLET; LETTER INDICATES AS FOLLOWS:
  A = AUDIO V = VIDEO I = INTERCOM
- SPEAKER, CEILING MOUNTED
- X — SPEAKER, WALL MOUNTED, "X" INDICATES THE TYPE, PROVIDE SCHEDULE ON LEGEND. MTD. 7'–6" [2286mm] AFF UNLESS OTHERWISE NOTED.
- R — RADIO CHANNEL SELECTOR FACILITIES, MTD. 4'–6" [1372mm] AFF UNLESS OTHERWISE NOTED.
- R M — SPEAKER PROGRAM SELECTOR SWITCH & VOLUME CONTROL MTD. 4'–6" [1372mm] AFF UNLESS OTHERWISE NOTED.
- M — OUTLET, TELEVISION
  BLANK = 4 11/16" [119mm] MASTER ANTENNA OUTLET BOX W/BLANK COVER, MTD. 18" [457mm] AFF UNLESS OTHERWISE NOTED.
  C = CAMERA (CCTV SYSTEM), MTD 18" [457mm] AFF
  M = MONITOR (CTTV SYSTEM).
- TV — TELEVISION CABLE JACK. PROVIDE BACKBOX AND 1" C. TO ACCESSIBLE CEILING
- TELEPHONE TERMINAL CABINET
- TTB — TELEPHONE BACKBOARD (WALL MOUNTED)
- REMOTE DICTATING OUTLET MTD 1'–6" [457mm] AFF. UNLESS OTHERWISE NOTED.
- INTERCOM STATION (REFER TO SPECS. FOR FUNCTIONAL OPERATION OF INSTRUMENT & TYPE REQUIRED).
- S — INTERCOM STAFF STATION.
- M T — CARD ACCESS READER; LETTER INDICATES AS FOLLOWS:
  M=MOUNT
  C–CEILING D–DESK F–FLUSH H–HIDDEN M–MULLION
  P–PEDESTAL R–RACK S–SURFACE W–WALL
  T=TECHNOLOGY/TYPE
  B–BARCODE F–ELEVATOR FLOOR CALL H–ELEVATOR HALL CALL
  M–MAG STRIP P–PROXIMITY S–SMART CARD
  T–TOKEN
- M — KEYPAD DEVICE; LETTER INDICATES AS FOLLOWS:
  M=MOUNT
  C–CEILING D–DESK F–FLUSH H–HIDDEN M–MULLION
  P–PEDESTAL R–RACK S–SURFACE W–WALL
- M T — PUSH BUTTON; LETTER INDICATES AS FOLLOWS:
  M=MOUNT
  C–CEILING D–DESK F–FLUSH H–HIDDEN M–MULLION
  P–PEDESTAL R–RACK S–SURFACE W–WALL
  T=TECHNOLOGY/TYPE
  B–BELL PUSH D–DURESS P–PANIC R–DOOR RELEASE
  X–REQUEST TO EXIT
- RX — IR SENSOR, REQUEST TO EXIT
- DL — DOOR LOCK
- DC — DOOR CONTACT

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

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Drawing Title: ELECTRICAL SYMBOLS, ABBREVIATIONS AND LEGEND
Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: VA595-11-127
Building Number: BLDGS. 19 & 22
Drawing Number: E0.01
Dwg. 35 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

three inches = one foot

one and one half inch = one foot

one inch = one foot

three quarters inch = one foot

one half inch = one foot

three eighths inch = one foot

one quarter inch = one foot

one eighth inch = one foot

ELECTRICAL DEMOLITION NOTES:

1. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH RELOCATION AND REMOVAL OF ELECTRICAL WORK AS DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN ISSUES WHEN CONCEALED WORK HAS BEEN EXPOSED. NO ADDITIONAL CLAIMS FOR WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, UNLESS, IN CERTAIN CASES, CONSIDERED JUSTIFIABLE BY THE ENGINEER.

2. NOTE THAT THE FACILITY WILL BE OPERATIONAL DURING THE COURSE OF THIS PROJECT.

   2.1. THE CONTRACTOR IS TO COORDINATE ALL OF THE DEMOLITION WORK WITH THE FACILITY PERSONNEL TO MINIMIZE DISTURBING THE OPERATING EQUIPMENT, WIRING AND SYSTEMS.

   2.2. THE CONTRACTOR SHALL PERFORM REMOVAL AND DEMOLITION WORK WITH MINIMAL INTERFERENCE WITH EXISTING SYSTEMS.

   2.3. IF NECESSARY THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER FOR THE FACILITY.

3. DEMOLITION AND REMOVAL OF WORK SHALL BE PERFORMED IN A NEAT AND PROFESSIONAL MANNER. THE CONTRACTOR SHALL RESTORE, PATCH, PAINT, ETC., ANY INTERIOR/EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.

4. REFER TO ELECTRICAL DEMOLITION AND RENOVATION PLANS FOR NEW EQUIPMENT LAYOUT AND EXTENT OF EQUIPMENT BEING REPLACED, RELOCATED, OR REMOVED. COORDINATE WITH ALL TRADES AS TO EXTENT OF EQUIPMENT BEING REMOVED OR RELOCATED. CLOSELY COORDINATE THE EXTENT OF DEMOLITION SCOPE OF WORK WITH ARCHITECT, ENGINEER AND/OR MECHANICAL PLANS. PATCH AND PAINT (TO MATCH SURROUNDING CONDITIONS) ALL OPENINGS CREATED BY THIS DEMOLITION.

5. EXISTING CONDITIONS, EQUIPMENT, MATERIALS & SIZES ARE SHOWN FOR REFERENCE ONLY. VERIFY EXISTING CONDITIONS AND BRING ANY DISCREPANCIES TO THE ENGINEER'S ATTENTION IN WRITING PRIOR TO BID SUBMISSION.

6. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL DEMOLITION WORK FOR THIS PROJECT WHETHER OR NOT SPECIFICALLY INDICATED ON THIS OR OTHER DEMOLITION PLANS. THIS WORK SHALL INCLUDE BUT IS NOT LIMITED TO THE DISCONNECTION, REMOVAL AND DISPOSAL OF; LIGHTING FIXTURES, PANELBOARDS, DISCONNECT SWITCHES, RECEPTACLES, JUNCTION BOXES, WIRE, CABLE, CONDUIT, MOUNTING HARDWARE STRAPS OR CABLES, ELECTRICAL SERVICES ETC. PER THE SCOPE OF WORK FOR THIS PROJECT.

7. THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES, ETC., INCLUDING ASSOCIATED WIRING, CONDUITS, COVERS, BOXES, ETC., WHERE SHOWN ON THE DEMOLITION DRAWING. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL IN THE CEILING SPACE; JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO THE SOURCE PANELBOARD.

8. ALL WORK MUST BE SCHEDULED AND PERFORMED AS NOT TO INTERRUPT NORMAL OPERATIONS. REMOVAL OF ITEMS THAT WILL CAUSE ANY TYPE OF TEMPORARY SHUTDOWN SHALL BE PERFORMED DURING OFF-PEAK HOURS. ALL SUCH OUTAGES SHALL BE SCHEDULED AND COORDINATED WITH OWNER FIELD REPRESENTATIVE TO ENSURE ESSENTIAL SERVICES OR AREAS CAN BE MAINTAINED.

9. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL CLOSELY FOLLOW THE DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.

10. THE SHUTDOWN OF EXISTING BUILDING ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE APPROPRIATE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.

11. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ELECTRICAL AND ARCHITECTURAL LAYOUTS IN FULL COORDINATION WITH THE ENGINEER'S DEMOLITION PLANS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE POWER SUPPLY SOURCE.

12. ELECTRICAL CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY CONNECTIONS / DISCONNECTIONS AS NEEDED TO ENSURE ADEQUATE SAFETY AND PROTECTION OF ALL PERSONNEL AND EQUIPMENT.

13. ALL ELECTRICAL PANELS SHALL BE MAINTAINED AS WORKING PANELS THROUGHOUT CONSTRUCTION AND WILL CONTINUE TO MAINTAIN CIRCUITS FOR EXISTING LIGHTING OR EQUIPMENT TO REMAIN. PROVIDE AS NECESSARY TEMPORARY LIGHTING AND ELECTRICAL FEEDS TO ANY DEVICES THAT MAY BE REQUIRED FOR UNINTERRUPTED USE. PROVIDE TEMPORARY CONNECTIONS FOR RELOCATED EQUIPMENT DURING CONSTRUCTION.

14. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ANY DEVICES AND/OR FIXTURES LOCATED OUTSIDE OF DEMOLITION WORK AREA ARE NOT AFFECTED BY REMOVAL OF WIRING AND/OR CIRCUITING. WIRING/CONDUIT SHALL BE LEFT IN A SAFE CONDITION, LABELED FOR ITS USE, AND EXTENDED AS REQUIRED TO MAINTAIN CIRCUIT CONTINUITY, INCLUDING ALL APPLICABLE CONTROLS.

15. PORTIONS OF FEEDER RUNS THAT SHALL BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING FEEDER EXTENSIONS IN ALL ASPECTS INCLUDING BUT NOT LIMITED TO CABLE TYPE, CONDUIT SIZES, CONDUCTOR AMPACITY, ETC..

16. ALL EXISTING LOW VOLTAGE WIRING FOR FIRE ALARM/SECURITY, SOUND, AND/OR TELECOMMUNICATIONS THAT IS NOT REUSED SHALL BE REMOVED IN ITS ENTIRETY BY THE RESPONSIBLE CONTRACTOR. ALL EXISTING LOW VOLTAGE WIRING FOR MECHANICAL SYSTEMS THAT ARE NOT USED SHALL BE REMOVED IN ITS ENTIRETY BY THE CONTRACTOR.

17. CONTRACTOR IS TO EXERCISE EXTREME CAUTION WHEN CUTTING SLAB TO AVOID DAMAGE TO ANY EXISTING CONDUITS, PIPING, ETC. THAT MAY BE CONCEALED IN OR BENEATH THE SLAB. ANY FLOOR SLAB AFFECTED BY THE REMOVAL OF DEVICES FED VIA UNDERGROUND CONDUIT OR WIRING, SHALL BE FIRESTOPPED AND PATCHED BY THE GENERAL CONTRACTOR AND TO MATCH SURROUNDING FLOOR.

18. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR DISCONNECTING, RELOCATING, AND/OR RECONNECTING ALL EXISTING EQUIPMENT THAT IS TO REMAIN, EVEN IF THIS EQUIPMENT IS NOT SHOWN ON PLANS OR PANEL SCHEDULES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR EXTENDING EXISTING CIRCUITS FROM EXISTING EQUIPMENT THAT IS REMAINING TO NEW LOCATION. CONTRACTOR SHALL MATCH EXISTING GAUGE WIRE FROM EXISTING BREAKER TO RELOCATED EQUIPMENT.

19. IN THE EVENT THAT ELECTRICAL PLANS CALL FOR EXISTING WIRING TO BE REUSED, THE ELECTRICAL CONTRACTOR SHALL SURVEY EXISTING WIRING, BOXES, ETC. TO DETERMINE IF THE EXISTING BRANCH CIRCUIT MAY BE REUSED FOR NEW EQUIPMENT (IF WIRING REMAINS IN IT'S ORIGINAL CONDUIT). ELECTRICAL CONTRACTOR SHALL DETERMINE THAT THE ENTIRE RUN OF EXISTING POWER CONDUIT AND WIRING, FROM SOURCE PANEL TO LOAD FOR WIRING TO BE REUSED, IS FEASIBLE FOR REUSE AND MEETS THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES HAVING JURISDICTION.

    IN INSTANCES WHERE EXISTING CIRCUITS ARE TO BE EXTENDED OR REUSED, ELECTRICAL CONTRACTOR SHALL DISCONNECT EXISTING BRANCH CIRCUIT AND LEAVE IN A SAFE CONDITION (TAG AND LABEL ITS USE) FOR FUTURE RECONNECTION DURING RENOVATION PHASE.

20. IF SURVEY BY ELECTRICAL CONTRACTOR DEEMS THAT WIRING IS NOT FEASIBLE FOR REUSE, THEN THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ANY AND ALL WIRING DEEMED UNUSABLE, FROM LOAD TO SOURCE (INCLUDING DATA, COMMUNICATION, OR TELEPHONE WIRING). ANY CONDUITS STUBBED OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED TO MATCH SURROUNDING CONDITIONS.

ELECTRICAL DEMOLITION NOTES: (CONT.)

20. IF SURVEY BY ELECTRICAL CONTRACTOR DEEMS THAT WIRING IS NOT FEASIBLE FOR REUSE, THEN THE ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ANY AND ALL WIRING DEEMED UNUSABLE, FROM LOAD TO SOURCE (INCLUDING DATA, COMMUNICATION, OR TELEPHONE WIRING). ANY CONDUITS STUBBED OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED TO MATCH SURROUNDING CONDITIONS.

21. PANELBOARD CABINETS SHALL NOT BE USED FOR OTHER PURPOSES THAN CIRCUIT BREAKER INSTALLATIONS AND DISTRIBUTION POINTS, AND SHALL NOT BE USED AS A JUNCTION OR PULLBOX.

22. ALL UNUSED OUTLET BOXES THAT ARE TO REMAIN SHALL BE PROVIDED WITH MATCHING BLANK COVERS.

23. ALL RACEWAYS WHICH ARE EXPOSED AS A RESULT OF NEW WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.

24. EXISTING RACEWAYS THAT ARE NOT BEING REUSED SHALL BE REMOVED BACK TO THE NEAREST JUNCTION OR PULLBOX, AND THE OPENINGS BLANKED. ANY CONDUITS PENETRATING MASONRY SURFACES SHALL BE CUT INTO SURFACE, PATCHED, AND PAINTED TO MATCH SURROUNDINGS.

25. DISCONNECT, RELOCATE OR REMOVE ELECTRICAL INSTALLATIONS AND EQUIPMENT AS INDICATED BY PLANS AND AS REQUIRED BY CHANGES IN CONSTRUCTION. WHERE EXISTING ELECTRICAL INSTALLATIONS INTERFERE WITH NEW WORK AND WHERE SUCH INSTALLATIONS ARE TO REMAIN IN USE, THE NEW INSTALLATIONS SHALL BE RELOCATED AND/OR RECONNECTED TO COORDINATE WITH THE WORK INDICATED ON THE CONTRACT DRAWINGS. DETERMINE AND COORDINATE ALL EQUIPMENT LOCATIONS PRIOR TO INITIAL ROUGH-IN.

26. DISCONNECT AND RELOCATE/RECONNECT ANY ELECTRICAL LINES, BRANCH CIRCUITS, DEVICES (INCLUDING FIRE ALARM DEVICES), ETC. AND REPAIR PULL BOXES THAT MAY BE DISTURBED DURING THIS RENOVATION. UNLESS NOTED OTHERWISE, ALL EXISTING ELECTRICAL WORK WHICH WILL NOT BE RENDERED OBSOLETE AND WHICH MAY BE DISTURBED DUE TO ANY CHANGES REQUIRED UNDER THE CONTRACT, SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION AT NO COST TO OWNER. IF ANY EQUIPMENT TO REMAIN IS DAMAGED DURING CONSTRUCTION, IT SHALL BE REPLACED WITH NEW (WITH NO COST APPLIED TO OWNER).

27. FOR EXISTING PANELS MODIFIED AS PART OF THIS PROJECT, E.C. SHALL TEST AND KEEP ALL EXISTING WORKING CIRCUIT BREAKERS AND SHALL USE THEM FOR NEW EQUIPMENT, DEVICES, LIGHTING, AND/OR SPARES. E.C. SHALL REPLACE NON-WORKING BREAKERS WITH NEW "IN KIND" BREAKERS. PROVIDE BLANK COVERS/COVERPLATES FOR ALL EXPOSED CIRCUIT BREAKER SPACES (THOSE WITHOUT INSTALLED CIRCUIT BREAKERS; EXPOSED BUS BARS) FOR PERSONNEL PROTECTION.

28. AS DIRECTED BY THE OWNER, ALL EXISTING EQUIPMENT AND MATERIAL IN USABLE CONDITION THAT IS REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER, OR HANDLED AS INSTRUCTED BY THE OWNER, BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR. ALL MATERIALS DEEMED FOR REMOVAL SHALL BE RECYCLED WHENEVER POSSIBLE.

29. REMOVAL OF BRANCH CIRCUITS IN ASSOCIATED PANELS SHALL BE COORDINATED WITH THE REMOVAL OF EQUIPMENT IN SPECIFIED AREA. REFER TO RENOVATION PLANS AND ELECTRICAL PANEL SCHEDULES FOR NEW CIRCUITING ARRANGEMENT. ANY WIRING OR CIRCUITS BEING REVISED SHALL MEET MINIMUM WIRE SIZES AS INDICATED IN PANEL SCHEDULES. ELECTRICAL CONTRACTOR SHALL REMOVE WIRING/CONDUIT BACK TO SOURCE FROM UNUSED OR ABANDONED CIRCUITS, LABEL CIRCUIT BREAKER AS "SPARE", AND LEAVE IN THE "OFF" POSITION.

30. EXISTING PANELBOARD DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE REPLACED WITH NEW "TYPED" DIRECTORIES, TO ACCURATELY REFLECT THE BRANCH CIRCUIT WIRING MODIFICATIONS AND EXISTING CONDITIONS.

GENERAL NOTES AND CONDITIONS:

1. THESE DRAWINGS WERE PREPARED FROM INFORMATION TAKEN FROM THE AVAILABLE BUILDING DRAWINGS, ARCHITECTURAL BACKGROUNDS PROVIDED BY THE OWNER AND FIELD SURVEY INFORMATION COMPILED BY THE ENGINEERING DESIGN TEAM FOR THE PURPOSE OF ENGINEERING DESIGN. EXISTING CONDITIONS ARE SHOWN AS ACCURATELY AS POSSIBLE. THERE IS THE POSSIBILITY THAT CONDITIONS SHOWN ARE NOT EXACTLY AS EXISTING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, LOCATIONS, SIZES AND CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO BEGINNING INSTALLATION OR FABRICATION WORK.

   1.1. DO NOT SCALE DRAWINGS.

   1.2. SHOULD IT APPEAR THAT THE WORK INTENDED TO BE DESCRIBED OR RELATED WORK ARE NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THE DRAWINGS, OR IN THE SPECIFICATIONS, CONSULT THE ENGINEER FOR NECESSARY CLARIFICATIONS, AND CONFORM TO THOSE CLARIFICATIONS INSOFAR AS THEY ARE CONSISTENT WITH THE ORIGINAL DRAWINGS AND SPECIFICATIONS. IN NO CASE SHALL WORK PROCEED IN UNCERTAINTY.

   1.3. EQUIPMENT ARRANGEMENTS ARE DESIGNED TO SHOW PREFERRED CONFIGURATIONS TO SUIT KNOWN CONDITIONS. ACTUAL INSTALLATION BY CONTRACTOR MAY BE ALTERED AS REQUIRED TO SUIT FIELD CONDITIONS ENCOUNTERED DURING CONSTRUCTION WITHOUT COMPROMISING THE INTENT OF THE ORIGINAL DESIGN.

   1.4. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT SITE PRIOR TO STARTING WORK.

2. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT ALL RULES AND REGULATIONS, INCLUDING THOSE WHICH MAY BE ISSUED BY THE OWNER, ARE BEING OBSERVED, PARTICULARLY WORKPLACE SAFETY AND THE CONDUCT OF ALL THOSE EMPLOYED DIRECTLY AND INDIRECTLY BY HIM ON THE PREMISES, AND THE OWNER'S EMPLOYEES WHO MAY BE IMPACTED OR AFFECTED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL INSTALL SIGNAGE, BARRIERS, AND OTHER MEANS TO PROVIDE WARNING AND PERSONNEL SAFETY. PLACEMENT OF THESE ITEMS WILL BE COORDINATED WITH THE OWNER AND HIS ONGOING OPERATIONS AND WILL PROMPTLY BE REVISED WHEN WORK IN A PARTICULAR AREA HAS BEEN COMPLETED.

   2.1. DURING PERFORMANCE OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION AND MAINTENANCE OF WARNING SIGNS, LIGHT SIGNAL DEVICES, GUARD LIGHTS, BARRICADES, GUARD RAILS, FENCES AND OTHER DEVICES, APPROPRIATELY LOCATED ON AND AROUND THE JOB SITE WHICH GIVE PROPER AND UNDERSTANDABLE WARNING TO PERSONS WITH REGARD TO HAZARDOUS CONDITIONS, EQUIPMENT AND OPERATIONS BEING PERFORMED IN CONJUNCTION WITH THE WORK.

3. THIS INSTALLATION WILL CONFORM TO ALL CODES AND THE REQUIREMENTS OF FEDERAL, STATE, AND LOCAL REGULATORY AGENCIES HAVING JURISDICTION. IN PARTICULAR, THE WORK WILL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE (UCC), INCLUDING ALL OF ITS APPLICABLE SUBCODES AND AMENDMENTS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

   BUILDING: INTERNATIONAL BUILDING CODE: 2009

   ELECTRICAL: NATIONAL ELECTRIC CODE: NFPA 70 – 2008

4. ALL WORK WILL BE LAWFULLY EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND WILL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING CODES (ABOVE), INDUSTRY STANDARDS, AND IN CONFORMANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.

5. WORK UNDER THIS CONTRACT SHALL CONSIST OF THE CONTRACTOR PROVIDING ALL LABOR, MATERIALS, AND SERVICES, INCLUDING WORK NOT SPECIFICALLY SHOWN BUT REASONABLY IMPLIED. THIS SHALL INCLUDE CUTTING, PATCHING AND RESTORATION OF EXISTING SURFACES DAMAGED DURING THE CONSTRUCTION. CONTRACTOR SHALL ALSO PROVIDE ALL EQUIPMENT SHOWN OR SPECIFIED OR AN APPROVED EQUIVALENT. SUBSTITUTED EQUIPMENT OR MATERIALS SHALL NOT BE INSTALLED UNTIL GIVEN WRITTEN APPROVAL BY THE OWNER.

6. EACH TRADE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING ALL TEMPORARY POWER SOURCES AND ANY REQUIRED UTILITIES FOR ANY TEMPORARY MECHANICAL, PLUMBING, AND/OR ELECTRICAL EQUIPMENT OR SYSTEMS (REQUIRED BY THEIR INDIVIDUAL TRADES SCOPE OF WORK) DURING THE COURSE OF CONSTRUCTION AND PHASING/SEQUENCING OF WORK. THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE INSTALLATION AND ROUTING OF: TEMPORARY FEEDERS, CONDUIT, TRANSFORMERS, ON-SITE GENERATOR PACKAGES, OVERCURRENT PROTECTION DEVICES, DISCONNECTS, CONNECTIONS AND DISCONNECTION OF EQUIPMENT, ETC. ALL ELECTRICAL WORK MUST BE PERFORMED BY A LICENSED ELECTRICIAN. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS INCURRED FOR NONCOMPLIANCE WITH THESE CONTRACT DOCUMENTS. CONTRACTOR WILL NOT BE ALLOWED CHANGE ORDERS FOR PROBLEMS ARISING FROM NEGLECT OF PROVISIONS INCLUDED IN THESE CONDITIONS.

8. MAINTAIN ORDERLY HOUSEKEEPING DURING CONSTRUCTION, AND UPON SUBSTANTIAL COMPLETION PERFORM FINAL CLEANUP. REMOVE CONSTRUCTION RUBBISH, SCAFFOLDING, EQUIPMENT, TEMPORARY PROTECTION, TEMPORARY FIELD STRUCTURES, AND OTHER MATERIALS OR EQUIPMENT THAT WAS REQUIRED IN CONNECTION WITH THE CONSTRUCTION, BUT NOT A PERMANENT PART THEREOF.

9. THOSE PERFORMING WORK AS A CONTRACTOR MUST EXAMINE SUBSTRATES AND CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE CONTRACTOR IN WRITING, OF CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. COMMENCEMENT OF WORK BY A TRADE ON A SURFACE OR CONSTRUCTION SHALL IMPLY ACCEPTANCE OF SUCH SURFACE OR CONSTRUCTION. DO NOT PROCEED WITH INSTALLATION UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

10. THE CONTRACTOR SHALL SECURE ALL PERMITS AND APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES AND CERTIFICATES OF INSPECTION REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER ALL PERMITS, CERTIFICATES AND APPROVALS TO THE OWNER AGENT PRIOR TO FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR MUST FILE NECESSARY DRAWINGS, PREPARE DOCUMENTS AND MAKE APPLICATIONS FOR EACH REQUIRE PERMIT AND INSPECTION, PRIOR TO COMMENCING WORK TO AVOID DELAYS DURING CONSTRUCTION.

11. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND MANUFACTURERS DATA SHEETS ON ALL EQUIPMENT AND MATERIALS SPECIFIED ON DRAWINGS FOR APPROVAL BY OWNER OR AGENT FOR THE OWNER. THESE DRAWINGS OR SHEETS SHALL CONTAIN ALL NECESSARY DATA, I.E., MANUFACTURER, CATALOG NUMBER, SIZE, DIMENSIONS, CAPACITY, WIRING DETAILS AND ALL OTHER ENGINEERING DATA AND DETAILS NECESSARY FOR COMPLETE CLARITY AND INSTALLATION.

12. THE CONTRACTOR SHALL KEEP ONE SET OF THE LATEST ISSUE OF DRAWINGS WHICH SHALL REFLECT THE ACTUAL INSTALLED CONDITIONS AND CONNECTIONS OF ALL EQUIPMENT AND DEVICES. THE CONTRACTOR SHALL PROVIDE COPIES OF ALL MAINTENANCE INFORMATION AND INSTRUCTIONS RECEIVED WITH EQUIPMENT AND SYSTEMS. ALL "AS-BUILT" DRAWINGS AND MISCELLANEOUS INFORMATION SHALL BE GIVEN TO THE OWNER AND ENGINEER AT COMPLETION OF WORK. THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL AND LABOR TO BE FREE FROM DEFECTS FOR A ONE YEAR PERIOD FROM THE TIME OF OWNER ACCEPTANCE. ANY DEFECTS OCCURRING DURING THIS PERIOD SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

13. CONTRACTOR IS TO PROVIDE ALL REQUIRED SCAFFOLDING, LADDERS, RIGGING, HOISTING AND ALL OTHER EQUIPMENT REQUIRED FOR THE INSTALLATION OF THEIR WORK.

14. ESTABLISH PASSAGE CLEARANCES REQUIRED TO DELIVER, INSTALL AND ERECT ALL REQUIRE EQUIPMENT. IF STRUCTURES, EQUIPMENT AND SYSTEMS MUST BE ALTERED TO PROVIDE PASSAGE OF EQUIPMENT, THE CONTRACTOR SHALL RESTORE STRUCTURES, EQUIPMENT AND SYSTEMS TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE; INCLUDING REMOVING AND REPLACEMENT OF ALL CEILING AS REQUIRED TO COMPLETE THE WORK.

15. ALL WIRE TO BE STRANDED CONDUCTOR UNLESS IT IS EQUIPMENT GROUNDING CONDUCTOR OF #10 AND SMALLER.

16. NO MORE THAN 3 BRANCH CIRCUITS PER CONDUIT.

17. #10 WIRE ON LENGTHS GREATER THAN 100' AND NO MORE THAN 150' FOR A 20 AMP BRANCH CIRCUIT.

GENERAL NOTES AND CONDITIONS: (CONT.)

18. MINIMUM SIZE CONDUIT IS ¾".

19. ELECTRICAL ENCLOSURES MUST BE SUPPORTED INDIVIDUALLY.

20. ALL EXTERIOR METALLIC HARDWARE AND EQUIPMENT MUST BE CORROSIVE RESISTANT.

21. NFPA 70, 70E, 72, 99, 101, AND 13 MUST COMPLY.

22. CONDUITS MUST BE SUPPORTED WITHIN 3' OF EVERY JUNCTION BOX AND/OR ENCLOSURE AND EVERY 12" OF ANY DEGREE OF TURN.

23. METALLIC WARNING TAPE MUST BE WITHIN 6" OF TOP OF FINISH GRADE.

   a. MINIMUM COVER REQUIREMENTS. DIRECT BURIED CABLE OR CONDUIT OR OTHER RACEWAYS SHALL BE INSTALLED AS REQUIRED OF TABLE 300-5 OF THE NATIONAL ELECTRIC CODE OR 18", WHICHEVER IS GREATER.

   b. BACKFILL. BACKFILL CONTAINING LARGE ROCK, PAVING MATERIALS, CINDERS, LARGE OR SHARPLY ANGULAR SUBSTANCE, OR CORROSIVE MATERIAL SHALL NOT BE PLACED IN AN EXCAVATION WHERE MATERIALS MAY DAMAGE RACEWAYS, CABLES, OR OTHER SUBSTRUCTURES OR PREVENT ADEQUATE COMPACTION OF FILL OR CONTRIBUTE TO CORROSION OF RACEWAYS, CABLES, OR OTHER SUBSTRUCTURES.

24. CONDUITS OR RACEWAYS THROUGH WHICH MOISTURE MAY CONTACT ENERGIZED LIVE PARTS SHALL BE SEALED OR PLUGGED AT EITHER OR BOTH ENDS.

25. COMPRESSION FITTINGS MUST BE USED AND WRENCH TIGHT.

26. CONDUITS MUST BE LABELED WITH CIRCUIT IDENTIFICATION AT POINTS WHERE THEY ENTER JUNCTION BOX AND/OR ENCLOSURE.

27. WORKMANSHIP AS PER CODE WILL BE ENFORCED UP TO VA ELECTRICAL SUPERVISOR EXPECTATIONS.

28. ALL THREE PHASES MOTORS USED ON THE 208 VOLT SYSTEM MUST BE RATED AT 200 VOLT SPECIFIC MOTORS.

29. ALL RECEPTACLES WITHIN 6' OF A WET LOCATION WILL BE GFCI PROTECTED UNLESS A SPECIFIC PIECE OF EQUIPMENT IS BEING INSTALLED, THEN A SINGLE RECEPTACLE FOR THE EQUIPMENT WILL BE INSTALLED.

30. EVERYTHING THAT CONTROLS, CONSUMES, OR IS CAPABLE OF CONSUMING ELECTRIC WILL HAVE A LABEL. LABEL MUST HAVE CIRCUIT IDENTIFICATION, PANEL IT IS FED FROM, AND WHERE THE PANEL IS LOCATED.

31. RECEPTACLES WILL BE INSTALLED WITH GROUND DOWN.

32. "POD FURNITURE" WILL HAVE A CONNECTION WITH A CORD END. "POD FURNITURE" MUST BE AT LEAST 18" AWAY FROM THE WALL TO OBTAIN ACCESS.

33. NEUTRAL CONDUCTOR MUST BE IDENTIFIED WITH CORRESPONDING PHASE CONDUCTOR IN ALL JUNCTION BOXES AND/OR ENCLOSURES. DO NOT SHARE NEUTRAL CONDUCTOR.

34. MC CABLE MUST NOT BE USED TO CONNECT DEVICES HORIZONTALLY THROUGH THE WALL, SEPARATE DROPS FROM THE CEILING IS ACCEPTABLE TO DEVICES IN THE WALL.

35. RACEWAY AND CABLE SUPPORTS MUST BE UL LISTED TO SUPPORT RACEWAYS.

36. PHASE COLORS AS FOLLOWS: (BLACK, RED, AND BLUE FOR 120/208 VOLTS AND BROWN, ORANGE, AND YELLOW FOR 277/408 VOLTS.) NEUTRAL CONDUCTORS SHALL BE WHITE IN COLOR FOR 120/208 VOLTS AND GREY IN COLOR FOR 277/480 VOLTS.

37. PANEL SCHEDULES SHALL BE INSTALLED IN NEW PANELS IDENTIFYING ALL CIRCUIT BREAKERS AND ALSO INCLUDE THE IDENTIFICATION OF EXISTING CIRCUITS. PANEL SCHEDULES MUST BE INSTALLED WITHIN TWO WEEKS OF JOB COMPLETION. A COPY OF ALL PANEL SCHEDULES WILL BE ISSUED TO THE ELECTRIC SHOP.

38. WIRENUTS AND SPLICES ARE NOT ALLOWED IN ANY ELECTRICAL PANEL.

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: ELECTRICAL GENERAL NOTES AND CONDITIONS

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: E0.02

Dwg. 36 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

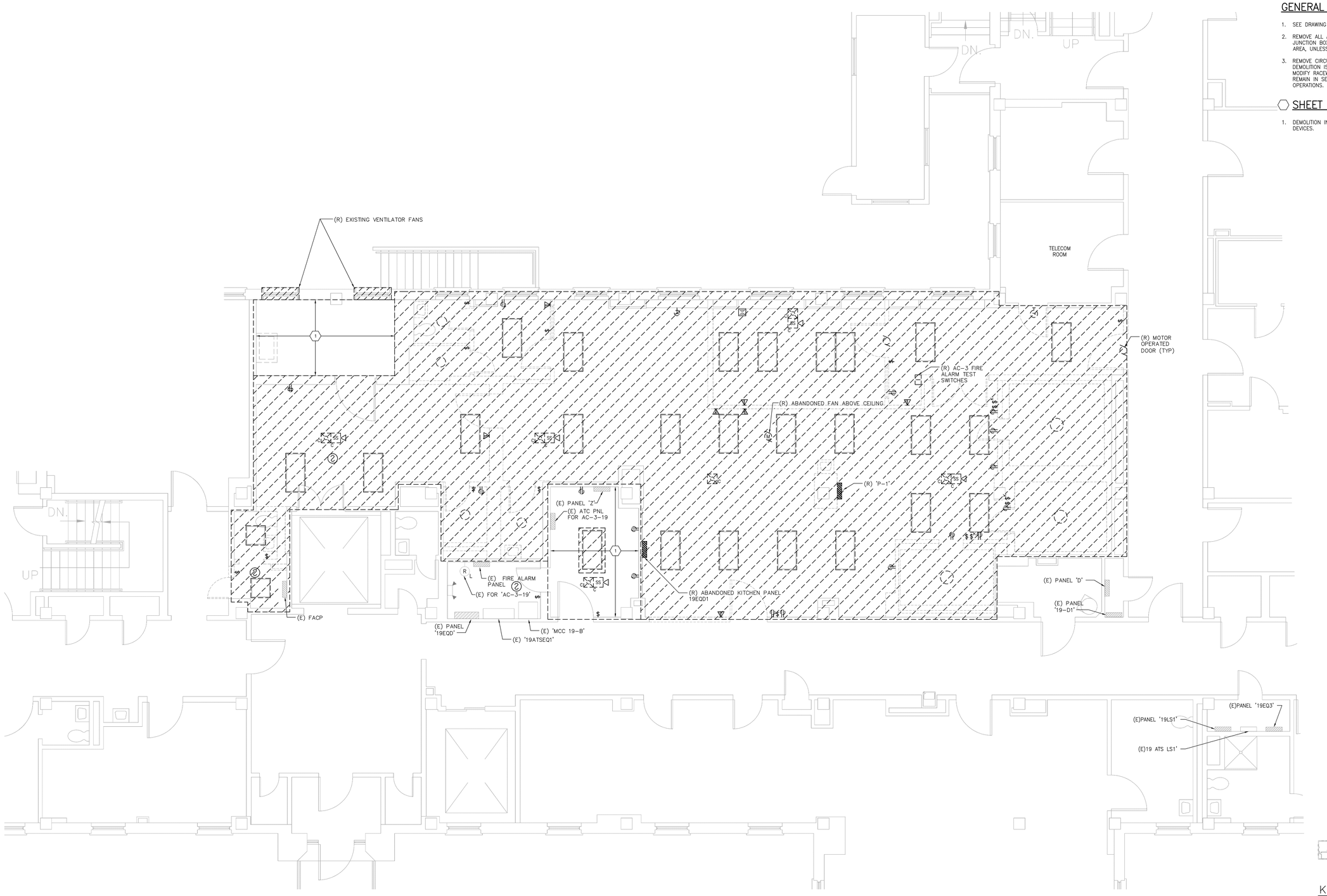
VA FORM 08-6231

GENERAL SHEET NOTES:

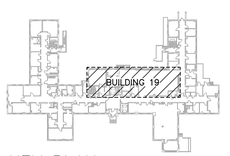
1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REMOVE ALL ACTIVE AND ABANDONED LIGHTING, BRANCH CIRCUITS, CONDUITS, JUNCTION BOXES AND ASSOCIATED EQUIPMENT WHICH ARE LOCATED WITHIN HATCHED AREA, UNLESS OTHERWISE NOTED.
3. REMOVE CIRCUIT AND CONDUIT BACK TO PANEL. IF EQUIPMENT NOT MARKED FOR DEMOLITION IS ON THE SAME CIRCUIT AS EQUIPMENT MARKED FOR DEMOLITION, THEN MODIFY RACEWAY AND CIRCUIT AS REQUIRED TO MAINTAIN POWER FOR EQUIPMENT TO REMAIN IN SERVICE. COORDINATE DEMOLITION WITH OWNER TO MINIMIZE DISRUPTION OF OPERATIONS.

SHEET KEYNOTES:

1. DEMOLITION IN THIS AREA LIMITED TO LIGHTING FIXTURES AND CEILING MOUNTED DEVICES.



1 BLDG 19: FIRST FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



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Drawing Title: BLDG 19: FIRST FLOOR ELECTRICAL DEMOLITION PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: - | Drawn: -

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: 19-ED1.01

Dwg. 37 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

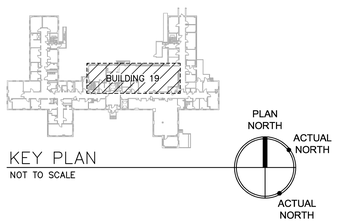
GENERAL SHEET NOTES:

1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.

⬡ SHEET KEYNOTES:

1. PROVIDE 20A/1P BREAKER AND (3)#12 AWG IN 3/4" CONDUIT TO PANEL LS1.
2. ALL EMERGENCY LIGHTS IN THIS ROOM ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 19LS1-25 AND PANEL E-CACHE-8.
3. ALL EMERGENCY LIGHTS IN THIS ROOM ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 19LS1-25 AND PANEL E-CACHE-7.

1 BLDG 19: FIRST FLOOR ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



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Drawing Title: BLDG 19: FIRST FLOOR ELECTRICAL LIGHTING PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **19-EL1.01**

Dwg. **38** of 47

Office of Construction and Facilities Management

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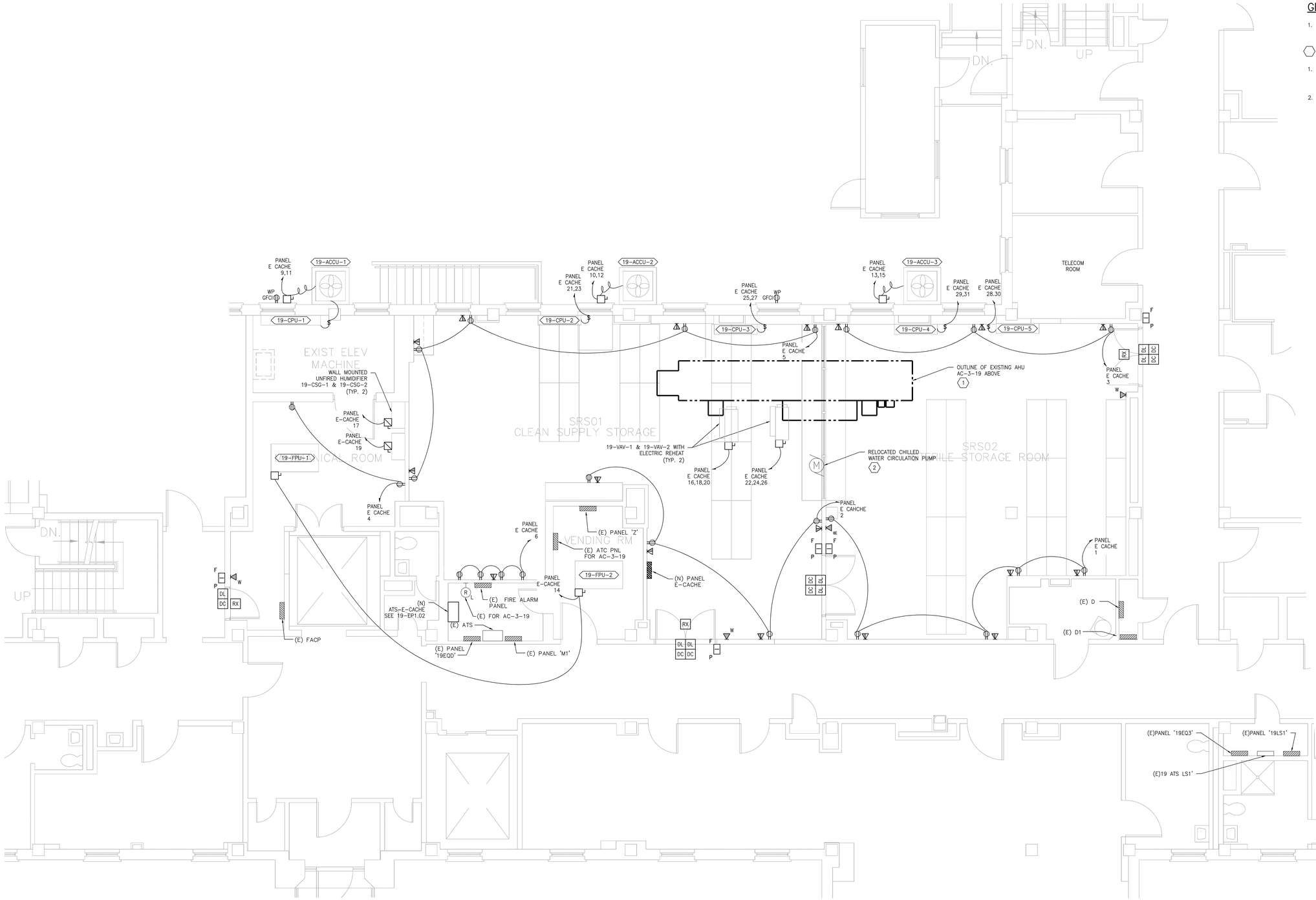
VA FORM 08-6231

GENERAL SHEET NOTES:

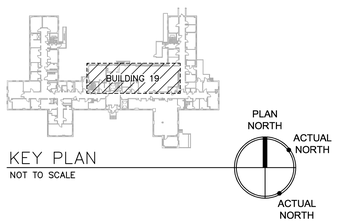
1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.

SHEET KEYNOTES:

1. FAN MOTORS IN AC-3-19 TO BE CHANGED FROM BELT DRIVE TO DIRECT DRIVE. HORSE POWER TO REMAIN THE SAME AS THE PREVIOUS MOTORS. MODIFY, EXTEND OR REPLACE EXISTING RACEWAY AND WIRING AS REQUIRED TO MAINTAIN POWER TO EXISTING EQUIPMENT.
2. RELOCATED CHILLED WATER CIRCULATION PUMP. MODIFY, EXTEND OR REPLACE EXISTING RACEWAY AND WIRING AS REQUIRED TO MAINTAIN POWER TO EXISTING EQUIPMENT.



1 BLDG 19: FIRST FLOOR ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"



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Drawing Title: BLDG 19: FIRST FLOOR ELECTRICAL POWER PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **19-EP1.01**

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Office of Construction and Facilities Management

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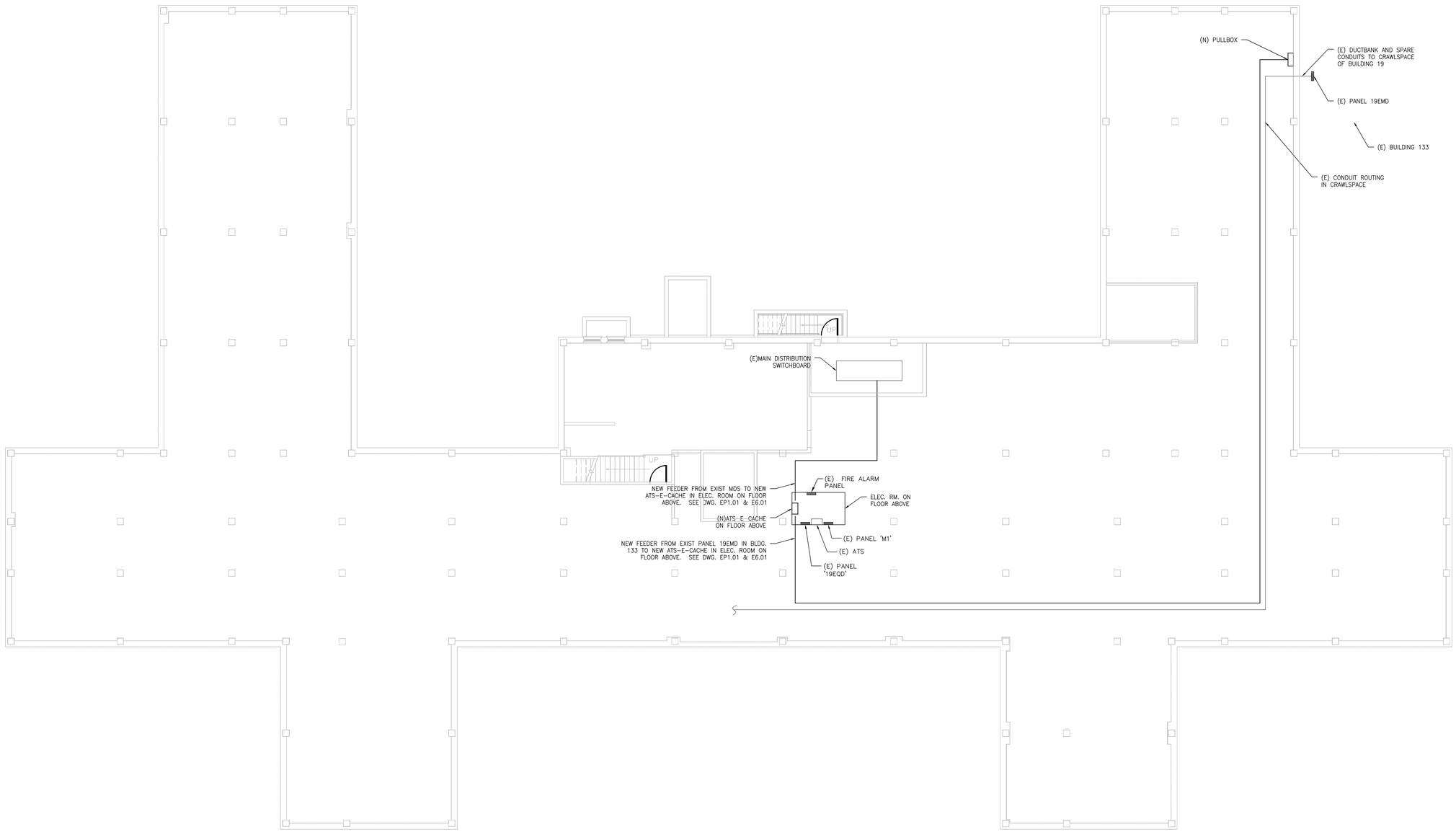
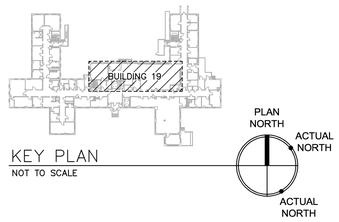
VA FORM 08-6231

GENERAL SHEET NOTES:

1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.



1 BLDG 19: BASEMENT ELECTRICAL POWER PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
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NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: BLDG 19: BASEMENT ELECTRICAL POWER PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **19-EP1.02**

Dwg. **40** of 47

Office of Construction and Facilities Management

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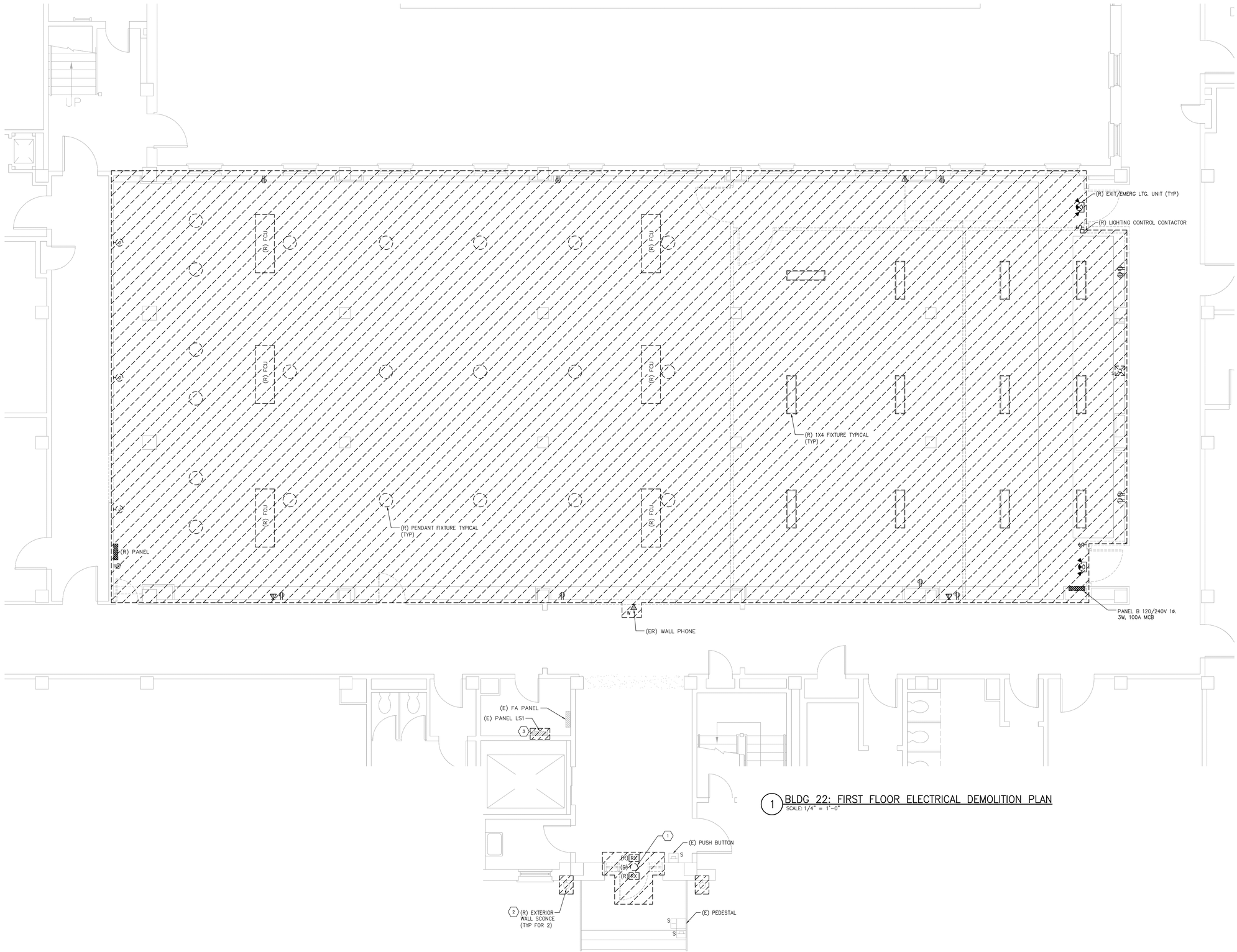


GENERAL SHEET NOTES:

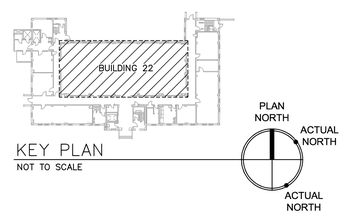
1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REMOVE ALL ACTIVE AND ABANDONED LIGHTING BRANCH CIRCUITS, CONDUITS, JUNCTION BOXES AND ASSOCIATED EQUIPMENT WHICH ARE LOCATED WITHIN HATCHED AREA, UNLESS OTHERWISE NOTED.
3. REMOVE CIRCUIT AND CONDUIT BACK TO PANEL. IF EQUIPMENT NOT MARKED FOR DEMOLITION IS ON THE SAME CIRCUIT AS EQUIPMENT MARKED FOR DEMOLITION, THEN MODIFY RACEWAY AND CIRCUIT AS REQUIRED TO MAINTAIN POWER FOR EQUIPMENT TO REMAIN IN SERVICE. COORDINATE DEMOLITION WITH OWNER TO MINIMIZE DISRUPTION OF OPERATIONS.

SHEET KEYNOTES:

1. DISCONNECT AND REMOVE EXISTING MOTOR OPERATED DOOR AND IR REQUEST TO EXIT. EXISTING CABLING AND FEEDERS TO REMAIN FOR FUTURE USE.
2. DISCONNECT AND REMOVE EXISTING SCONCES. EXISTING BRANCH CIRCUIT WIRING TO REMAIN FOR FUTURE USE.
3. EXISTING PANEL TO BE DEMOLISHED AND REPLACED WITH NEW PANEL. EXTEND, MODIFY, OR REPLACE EXISTING BRANCH CIRCUITS FOR CONNECTION TO NEW PANEL.

1 BLDG 22: FIRST FLOOR ELECTRICAL DEMOLITION PLAN

SCALE: 1/4" = 1'-0"



KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
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NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: BLDG 22: FIRST FLOOR ELECTRICAL DEMOLITION PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **22-ED1.01**

Dwg. 41 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

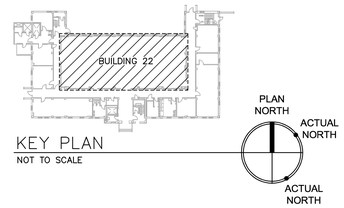
1 BLDG 22: FIRST FLOOR ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES:

1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.

SHEET KEYNOTES:

1. NEW WALL MOUNTED SCONCES. EXTEND AND CONNECT EXISTING BRANCH CIRCUITING LEFT BEHIND DURING DEMOLITION.
2. PROVIDE 20A/1P BREAKER AND (3)#12 AWG IN 3/4" CONDUIT TO PANEL LS1.
3. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-27 AND PANEL B-20.
4. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-27 AND PANEL B-21.
5. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-27 AND PANEL B-16.
6. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-27 AND PANEL B-23.
7. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-25 AND PANEL B-18.
8. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-25 AND PANEL B-17.
9. ALL EMERGENCY LIGHTS IN THIS LIGHTING CIRCUIT ARE TO BE WIRED TO ONE GTD. GTD IS TO BE CIRCUITED TO PANEL 22LS1-25 AND PANEL B-19.



KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: BLDG 22: FIRST FLOOR ELECTRICAL LIGHTING PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 22-EL1.01

Dwg. 42 of 47

Office of Construction and Facilities Management

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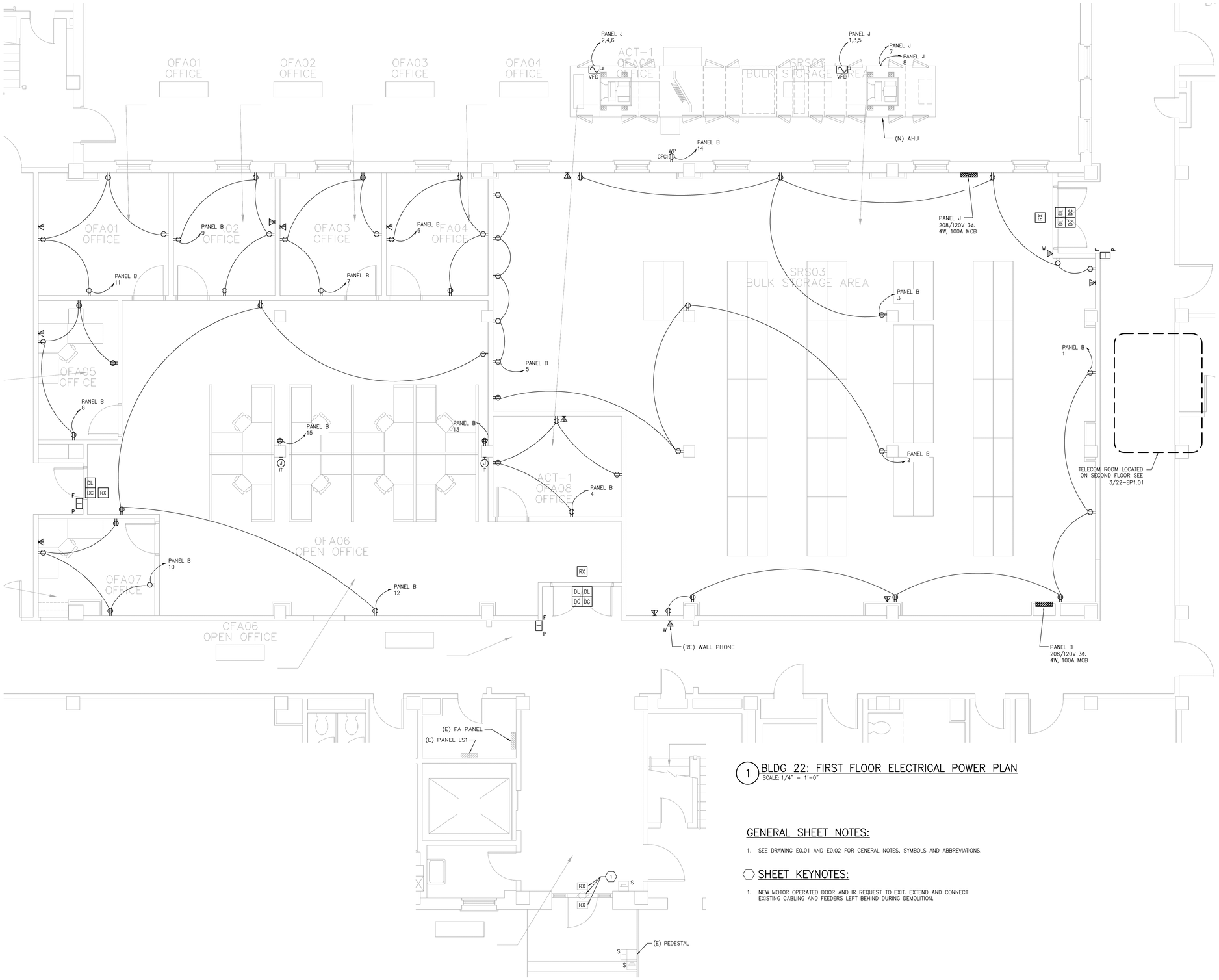
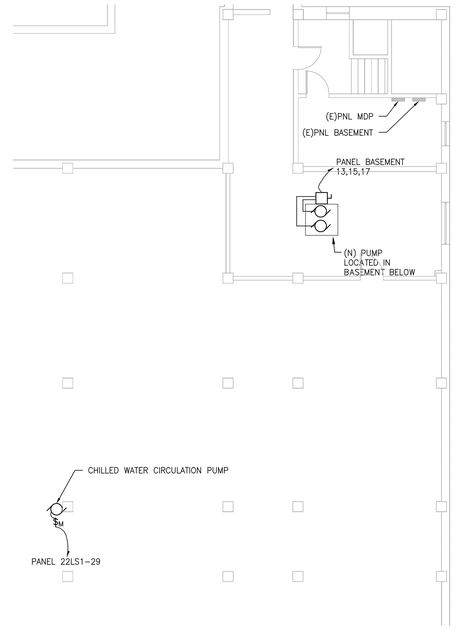
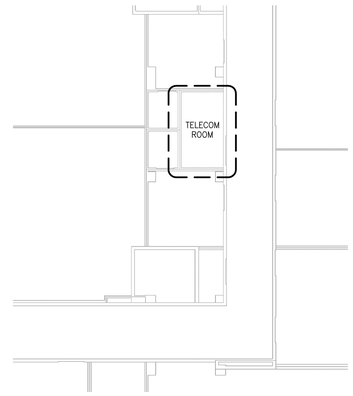


1 BLDG 22: FIRST FLOOR ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"



2 BLDG 22: BASEMENT ELECTRICAL POWER PLAN
SCALE: 1/8" = 1'-0"



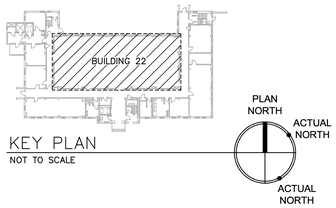
3 BLDG 22: 2ND FLOOR TELECOM ROOM
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES:

1. SEE DRAWING E0.01 AND E0.02 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.

SHEET KEYNOTES:

1. NEW MOTOR OPERATED DOOR AND IR REQUEST TO EXIT. EXTEND AND CONNECT EXISTING CABLING AND FEEDERS LEFT BEHIND DURING DEMOLITION.



KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

spiezle group

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ARCHITECT/ENGINEERS:

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BUILDING ONE - 1st FLOOR
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Drawing Title: BLDG 22: FIRST FLOOR ELECTRICAL POWER PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

Drawing Number: 22-EP1.01

Dwg. 43 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

three inches = one foot

one and one half inches = one foot

one inch = one foot

three quarters inch = one foot

one half inch = one foot

three eighths inch = one foot

one quarter inch = one foot

one eighth inch = one foot

GENERAL FIRE ALARM NOTES:

1. FIRE ALARM SYSTEM SHALL BE AN ADDRESSABLE TYPE SYSTEM, AND DEVICES SHALL BE INDIVIDUALLY ADDRESSED.
2. MODIFICATIONS TO THE FIRE ALARM SYSTEM SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR'S FIRE ALARM VENDOR. PLANS REFLECT THE DESIGN INTENT ONLY AND ARE TO BE USED FOR DEVICE PLACEMENT ONLY. ALL MODIFICATIONS REQUIRED BY THE OWNER AND THE LOCAL FIRE OFFICIALS SHALL BE INCORPORATED INTO THE INSTALLED SYSTEM.
3. ALL COMPONENTS SHALL BEAR THE U.L. LABEL FOR FIRE SERVICE USE AND SHALL BE COMPATIBLE FOR USE WITH ALL INTERCONNECTING EQUIPMENT.
4. PROVIDE PERMANENT, "TYPED" LABEL ON INSIDE OF ALL FIRE ALL CABINETS. INDICATE SPECIFIC DEDICATED POWER CIRCUIT FEEDING PANEL.
5. PROVIDE AND INSTALL ALL "FIRE MARSHAL APPROVED" SIGNAL TRANSMISSION EQUIPMENT.
6. ALL FIRE ALARM SYSTEM JUNCTION BOXES SHALL BE PAINTED RED. COVER PLATES SHALL BE PAINTED RED AND MARKED 'FA'.
7. INSTALLING CONTRACTOR SHALL RETURN ONE SET OF ACCURATELY MARKED DRAWINGS FOR 'AS BUILT' PURPOSES, WITH INSTALLED WIRING RUNS AND EQUIPMENT LOCATIONS.
8. FIRE ALARM CONTRACTOR SHALL PROVIDE A DRAWING AT THE MAIN FIRE ALARM PANEL SHOWING THE LOCATIONS OF ALL FIRE ALARM DEVICES.
9. REFER TO THIS DRAWING FOR FIRE ALARM SYSTEM MATRIX SEQUENCE OF OPERATIONS, FIRE ALARM RISER DIAGRAM, AND ADDITIONAL INFORMATION.
10. THE COMPLETE SYSTEM SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE PROJECT SPECIFICATIONS, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA72, A.N.S.I., A.D.A. REQUIREMENTS, AND ALL STATE AND LOCAL BUILDING CODES.
11. FIRE ALARM SYSTEM VENDOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS RELATING TO THE SYSTEM INSTALLATION. THIS SHALL INCLUDE PAYING FOR ALL FEES AND SCHEDULING OF INSPECTION.
12. SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER PRIOR TO BEGINNING ANY WORK. SHOP DRAWINGS SHALL INDICATE WIRE COUNTS, CONDUCTOR TYPES, RACEWAY LOCATIONS AND SIZES, EQUIPMENT CATALOG NUMBERS, BATTERY CALCULATIONS, AND DESCRIPTIONS CLEARLY HIGHLIGHTED TO SPECIFICALLY INDICATE WHICH PRODUCTS ARE PROPOSED FOR USE. AFTER SATISFACTORY REVIEW BY THE FIRE MARSHAL, WORK SHALL COMMENCE.
13. FIRE ALARM CONTRACTOR SHALL SUBMIT FIRE ALARM SHOP DRAWINGS (INCLUDING ALL TECHNICAL DATA SHEETS) THAT COMPLY WITH FIRE MARSHAL'S OFFICE SYSTEM INSTALLATION REQUIREMENTS, TO THE FIRE MARSHAL WITHIN 30 DAYS OF PERMIT ISSUE, FOR FINAL PERMIT APPROVAL PRIOR TO START OF WORK.
14. AS-BUILT DRAWINGS SHOWING POINT BY POINT CONNECTIONS OF ALL DEVICES AND FINAL EQUIPMENT LOCATIONS SHALL BE PROVIDED TO OWNER UPON FINAL FIRE MARSHAL INSPECTION AND APPROVAL.
15. FINAL CONNECTIONS BETWEEN EQUIPMENT AND WIRING SYSTEM SHALL BE MADE UNDER DIRECT SUPERVISION OF A QUALIFIED TECHNICAL REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER, WHO SHALL TEST THE SYSTEM COMPLETELY AND PROVIDE A CERTIFICATE IN WRITING AS TO THE PROPER INSTALLATION AND OPERATION OF THE FIRE ALARM SYSTEM PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM BY THE OWNER.
16. FIRE ALARM CONTRACTOR SHALL COORDINATE ALL SIGNAL DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH FIXTURE PLAN, FIRE MARSHAL AND OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
17. FIRE ALARM CONTRACTOR SHALL UTILIZE WHITE FIRE RATED CABLE FOR FIRE ALARM SYSTEM. INSTALL CABLE PER NATIONAL ELECTRICAL CODE AND ALL STATE AND LOCAL CODES HAVING JURISDICTION. CABLE SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURE. ROUTE CABLES ABOVE BOTTOM CORD OF JOISTS, CONCEALED TO MAXIMUM EXTENT POSSIBLE.
18. IF CONDUIT IS UTILIZED, THE MINIMUM SIZE SHALL BE PROVIDED AS REQUIRED BY TABLE 4, CHAPTER 9, OF THE NATIONAL ELECTRIC CODE, USING ACTUAL CROSS SECTION AREA OF THE WIRING INSTALLED.
19. IF NOT IN CONDUIT, ALL CABLE SHALL BE PLENUM RATED IN COMPLIANCE WITH UL-910 AND N.E.C., ARTICLE 800.
20. THE INSTALLER IS RESPONSIBLE FOR VERIFYING ALL WIRING IS CLEAR OF ANY GROUNDS, OPENS, OR SHORTS, AND THAT THE CIRCUITS ARE OF THE CORRECT RESISTANCE AND CAPACITANCE VALUES PRIOR TO TERMINATION OF WIRING TO FIRE ALARM EQUIPMENT. IN ADDITION, ALL WIRING MUST BE PROPERLY SUPPORTED.
21. TEE BARS SHALL BE USED TO SUPPORT JUNCTION BOXES IN SUSPENDED CEILING PANELS. LOCATE CABLE SO THEY DO NOT PREVENT REMOVAL OF PANELS.
22. ALL HORIZONTAL FIRE ALARM WIRING NOT IN CONDUIT SHALL BE TIED AND SUPPORTED AT 5'-0" (MAXIMUM) INTERVALS.
23. ALL OPENINGS SHALL BE SEALED UPON COMPLETION OF INSTALLATION TO PREVENT THE SPREAD OF SMOKE AND FIRE THROUGH OPENINGS. OPENINGS SHALL ALSO BE SEALED TO PREVENT WATER SEEPAGE WHERE APPLICABLE. ALL OPENINGS SHALL BE COORDINATED WITH OTHER CRAFTS TO PREVENT INTERFERENCE AND OBSTRUCTION. PENETRATIONS THROUGH FIRE WALLS MUST BE MADE BY AN APPROVED THROUGH PENETRATION FIRESTOP SYSTEM.
24. CONDUIT RUNS SHOWN DIAGRAMMATIC. INSTALLER SHALL FIELD VERIFY ALL LENGTHS, DIMENSIONS, AND ARRANGEMENTS PRIOR TO COMMENCEMENT OF WORK. INSTALLER SHALL IDENTIFY INTERFERENCES BETWEEN WORK IN OTHER AREAS.
25. WIRING SHALL BE PER PLAN WITH RESPECT TO CONDUCTOR SIZE, TYPE, AND QUANTITY. CONDUCTORS SHALL BE PERMANENTLY MARKED FOR FUTURE IDENTIFICATION. PERMANENT WIRE MARKERS SHALL BE USED TO IDENTIFY THE TERMINATIONS OF ALL CONDUCTORS WITH THE FIRE ALARM CONTROL PANEL, PULL BOXES, AND OTHER PANELS (REFERENCE NEC 760.10).
26. THE NUMBER OF SPLICES SHALL BE HELD TO AN ABSOLUTE MINIMUM. WHERE SPLICES CANNOT BE AVOIDED AND AT THE TERMINATION OF ALL EQUIPMENT WHICH INCORPORATE PIGTAIL CONNECTING WIRES, EITHER PHENOLIC TERMINAL BLOCKS OR PRESSURE TYPE CONNECTORS SHALL BE UTILIZED. ALL SUCH SPLICES SHALL OCCUR WITHIN JUNCTION BOXES.
27. REFER TO PLANS FOR DEVICE QUANTITIES AND LOCATIONS.
28. LOCATE DEVICES TO AVOID ANY CONFLICT WITH HVAC DUCTS, DIFFUSERS AND LIGHTING FIXTURES.
29. CONTRACTOR SHALL VERIFY LOCATION OF ALL NEW CEILING MOUNTED FIRE ALARM DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION. LOCATION OF DETECTORS SHALL COMPLY WITH THE FOLLOWING: SHALL NOT BE CLOSER THAN 24 INCHES FROM ANY VERTICAL OBSTRUCTION (BEAM, COLUMN, A/C DUCT, ETC.) SHALL NOT BE CLOSER THAN 3 FT. FROM, NOR IN THE DIRECT PATH OF A SUPPLY REGISTER.
30. WHEN CEILING MOUNTED, SMOKE AND/OR HEAT DETECTORS SHALL BE MOUNTED NO CLOSER THAN 4" TO A SIDE WALL; OR WHEN WALL MOUNTED, NO HIGHER THAN 4" OR LOWER THAN 12" FROM THE TOP OF THE DETECTOR TO THE CEILING.
31. THE DUST COVERS FURNISHED WITH THE SMOKE DETECTORS MUST BE INSTALLED WITH EACH DEVICE UNTIL FINAL CHECKOUT (REFERENCE NFPA 72).
32. UPON COMPLETION OF THE RENOVATION, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING UPDATED FACILITY MAPS AND ZONE SCHEDULES FOR BOTH BUILDINGS. MAPS SHOULD INDICATE LOCATION OF ALL FIRE ALARM DEVICES, DETAILED ZONE NUMBERS OR ADDRESSES AS REQUIRED. REFER TO FIRE ALARM SPECIFICATIONS FOR ADDITIONAL INFORMATION.

FIRE ALARM SYMBOLS

- CP — CODE ONE CONTROL AND ALARM STATION. MTD 5'-0" [1524mm] AFF UNLESS OTHERWISE NOTED.
- CT — CODE ONE TERMINAL CABINET.
- CA — CODE ONE ANNUNCIATOR PANEL.
- CB — CODE ONE BEDSIDE STATION.
- CD — CODE ONE DUTY STATION, MTD 5'-0" [1524mm] AFF UNLESS OTHERWISE NOTED.
- ALARM, CHECK VALVE
- FAC — ALARM, FIRE, COMMUNICATOR
- FACP — ALARM, FIRE, PANEL; LETTERS INDICATE AS FOLLOWS: FACC = CENTRAL CONSOLE FACP = CONTROL PANEL MFACP= MASTER CONTROL PANEL FAAP = ANNUNCIATOR PANEL
- BATT — ALARM, FIRE; LETTERS INDICATE AS FOLLOWS: BATT = BATTERIES CHR = CHARGER FAR = RECORDER
- OSY — ALARM, FIRE, VALVE SUPERVISORY SWITCH.
- FATC — ALARM, FIRE, TERMINAL CABINET.
- FARP — ALARM, FIRE, REMOTE PANEL.
- RPS — REMOTE POWER SUPPLY
- PIV — ALARM, FIRE, POST INDICATOR VALVE.
- FTR — ALARM, TRANSPONDER OR TRANSMITTER
- F — ALARM, FIRE, MANUAL PULL STATION
- ALARM, GONG
- ALARM, HORN/STROBE, ONE ASSEMBLY
- C — ALARM, HORN/STROBE, ONE ASSEMBLY (C=CEILING MOUNTED)
- ALARM, HORN/STROBE, SEPARATE ASSEMBLY
- C — ALARM, STROBE LIGHT, SIGNAL LIGHT (C=CEILING MOUNTED)
- H — ALARM, MANUAL CONTROL
- M — ALARM, MINI HORN
- S C — ALARM, AUDIBLE SPEAKER (C=CEILING MOUNTED)
- SS C — ALARM, AUDIBLE SPEAKER/STROBE (C=CEILING MOUNTED)
- WD — ALARM, SPRINKLER SYSTEM WATER FLOW BELL
- VA — ALARM, VOICE COMMUNICATION PANEL
- TS — ALARM, TAMPER SWITCH
- A — DETECTION, GAS
- SCCP — DETECTION, SMOKE CONTROL AND PRESSURE PANEL
- EPO — DETECTION SWITCH, ABORT
- DETECTION SWITCH, VALVE TAMPER
- DETECTOR, FLAME FLICKER
- DETECTOR, FLOW SWITCH
- PS — DETECTOR, PRESSURE SWITCH
- HD — DETECTOR, HEAT
- R/T H — DETECTOR, HEAT; LETTER INDICATES AS FOLLOWS: R/T = COMBINATION F = FIXED TEMPERATURE RISE R/C = RATE COMPENSATION R = RATE OF
- H — DETECTOR; LETTER INDICATES AS FOLLOWS: BLANK = SMOKE DETECTOR H = HEAT SMOKE I = IONIZATION SMOKE P = PHOTOELECTRIC SMOKE IH = IONIZATION AND HEAT SMOKE IP = IONIZATION AND PHOTOELECTRIC SMOKE PH = PHOTOELECTRIC AND HEAT SMOKE IPH = IONIZATION, PHOTOELECTRIC, AND HEAT
- DETECTOR, SMOKE, FOR DUCT
- DETECTOR, SWITCH LEVEL
- FA — FIRE ALARM LINE = FA
- DH — ELECTROMAGNETIC TYPE DOOR HOLDER OUTLET
- DL — ELECTROMAGNETIC TYPE DOOR LOCK OUTLET
- CITY FIRE ALARM MASTER STATION MTD 5'-6" [1676mm] AFF UNLESS NOTED.
- FAT 2-4-6 — FIRE ALARM TRANSMITTER (BASE LOOP) NUMERALS DENOTE CODE.
- FAT 2-4-6 — FIRE ALARM TROUBLE TRANSMITTER (BASE LOOP) NUMERALS DENOTE CODE.
- C — ADDRESSABLE CONTROL MODULE
- M — ADDRESSABLE MONITOR MODULE
- DM — ADDRESSABLE DUAL MONITOR MODULE
- R — ADDRESSABLE RELAY MODULE
- HR — HEAVY DUTY RELAY
- P — POWER SUPPLY RELAY

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:

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Drawing Title: FIRST FLOOR ELECTRICAL FIRE ALARM SYSTEM AND NOTES

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: VA595-11-127

Building Number: BLDGS. 19 & 22

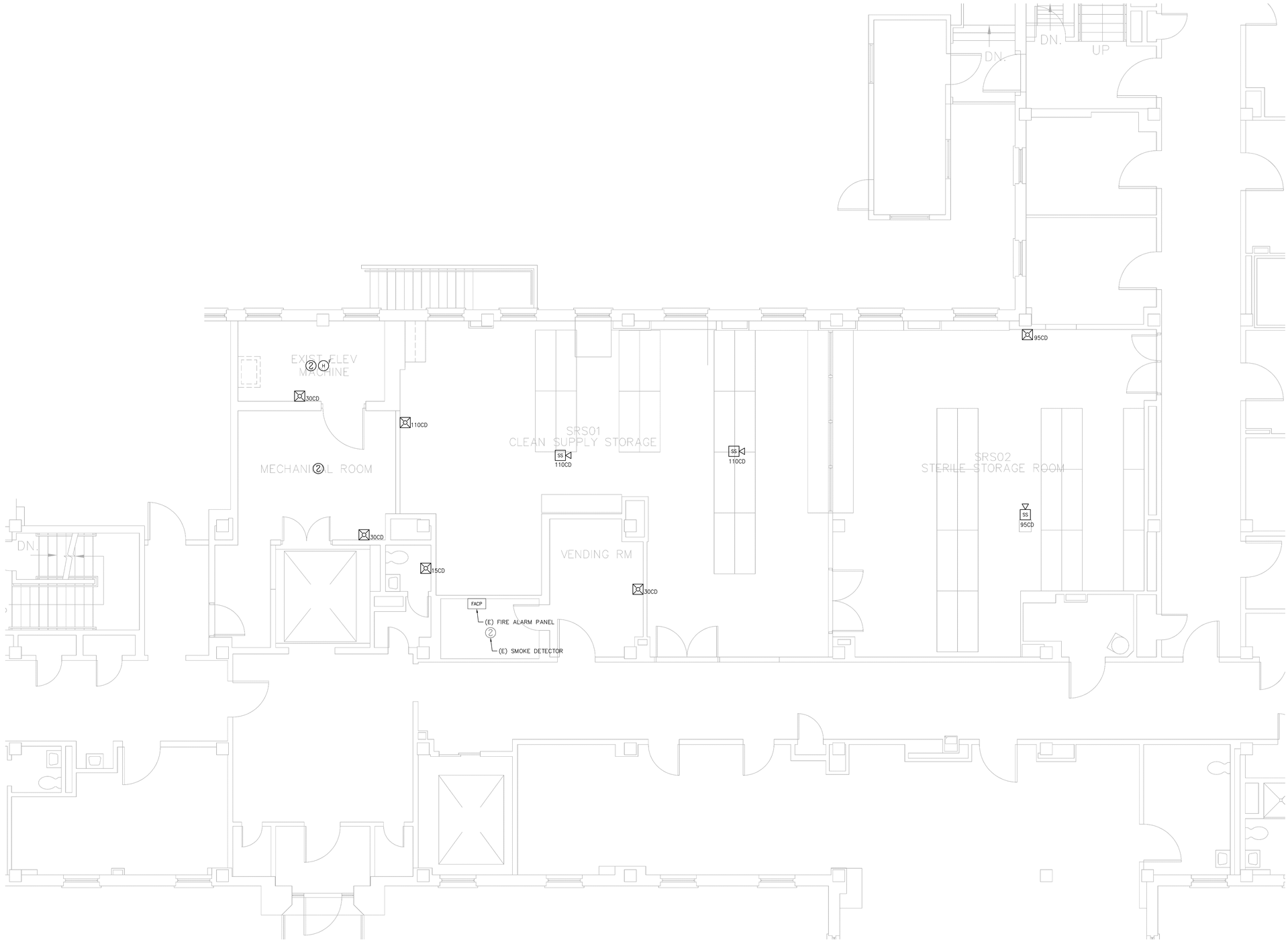
Drawing Number: FA0.01

Dwg. 44 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

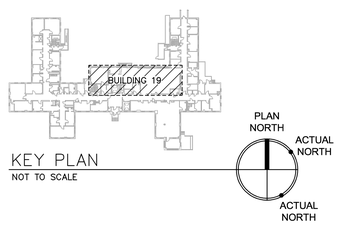


1 BLDG 19: FIRST FLOOR ELECTRICAL FIRE ALARM PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES:

1. SEE DRAWING FA0.01 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. LEBANON VA FIRE ALARM SYSTEM WIRING COLOR CODING AS OF 4/4/11.

A. SIGNATURE DEVICES:	PINK AND GREY
B. POWER WIRES:	RED AND BLACK
C. HORN:	BLUE/BLUE W/TRACER
D. STROBE:	YELLOW/YELLOW W/TRACER
E. STROBE MASS NOTIFICATION:	TAN/TAN W/TRACER
F. DOOR HOLDS:	BLUE/ORANGE
G. FLOW SWITCH:	BROWN/BROWN W/TRACER
H. TAMPER SWITCH:	PINK/PINK W/TRACER
I. ELEVATOR RECALL:	YELLOW/BLUE
J. AUDIO (SPEAKER MN):	CABLE SHIELDED PLENUM



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CONSULTANTS:

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Drawing Title: BLDG 19: FIRST FLOOR ELECTRICAL FIRE ALARM PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **19-FA1.01**

Dwg. **45** of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

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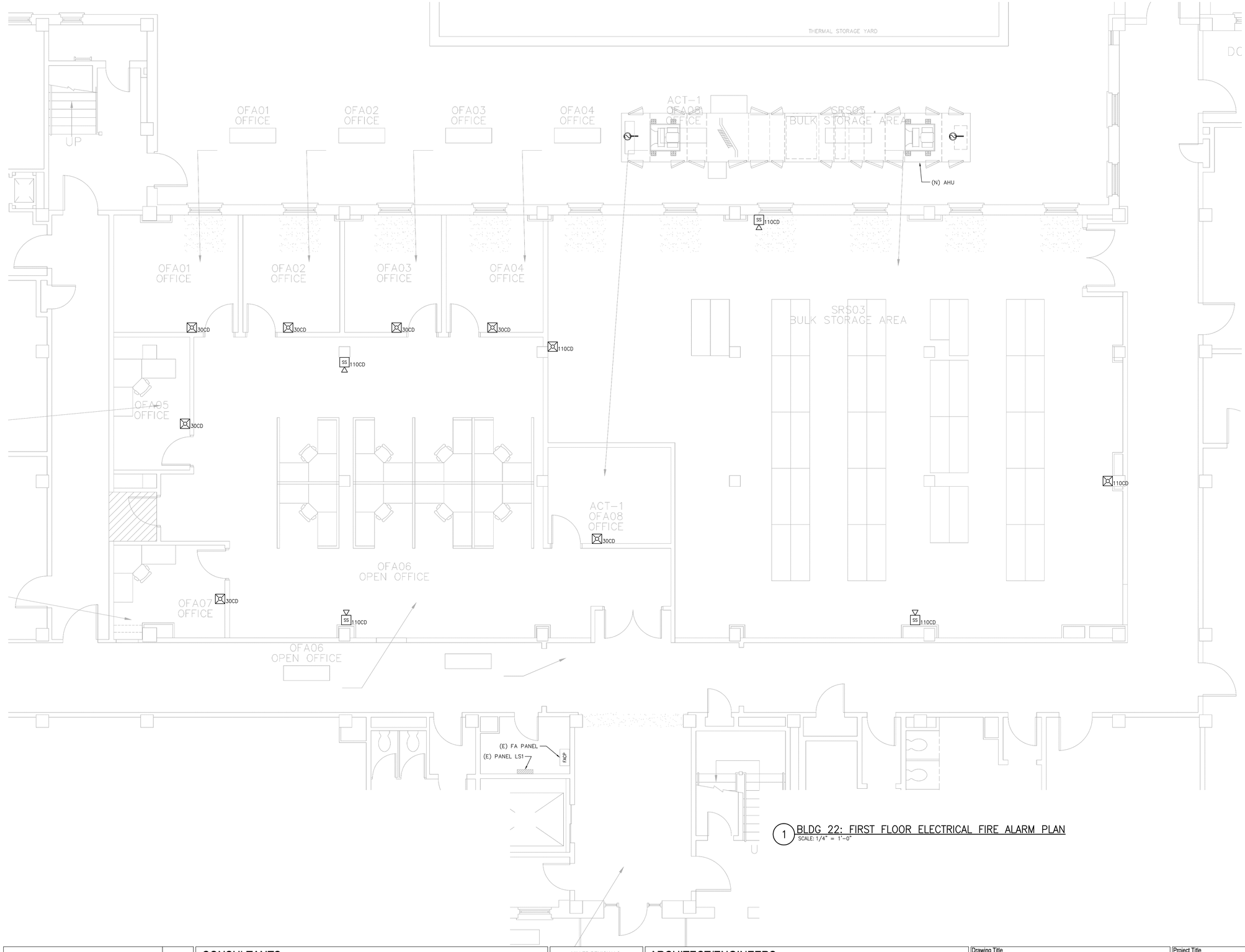

1 BLDG 22: FIRST FLOOR ELECTRICAL FIRE ALARM PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES:

1. SEE DRAWING FA0.01 FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. LEBANON VA FIRE ALARM SYSTEM WIRING COLOR CODING AS OF 4/4/11.

A. SIGNATURE DEVICES:	PINK AND GREY
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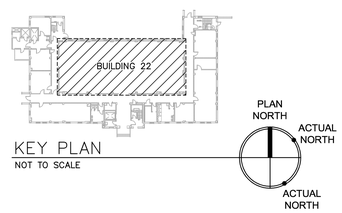
C. HORN:	BLUE/BLUE W/TRACER
D. STROBE:	YELLOW/YELLOW W/TRACER
E. STROBE MASS NOTIFICATION:	TAN/TAN W/TRACER
F. DOOR HOLDS:	BLUE/ORANGE
G. FLOW SWITCH:	BROWN/BROWN W/TRACER
H. TAMPER SWITCH:	PINK/PINK W/TRACER
I. ELEVATOR RECALL:	YELLOW/BLUE
J. AUDIO (SPEAKER MN):	CABLE SHIELDED PLENUM



KEY PLAN
NOT TO SCALE

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

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Drawing Title: BLDG 22: FIRST FLOOR ELECTRICAL FIRE ALARM PLAN

Approved: Project Director

Project Title: **LEBANON - EMERGENCY CACHE**

Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042

Date: 04-10-2013 | Checked: GREGG | Drawn: READ

Project Number: **VA595-11-127**

Building Number: BLDGS. 19 & 22

Drawing Number: **22-FA1.01**

Dwg. **46** of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Panel Name: B — New Panel — ☐ Main Lugs Only ☑ Main Breaker: 100
Panel Voltage: 208Y/120V, 3 Phase, 4 Wire — Panel A.I.C. Rating: 22k

ID	No. Ckt.	Description	Branch Ckt. No.	Wire	Grd	Breaker P	Trip	Load Code	Phase VA	A	B	C	Load VA	Code	Breaker Trip	P	Branch Ckt. No.	Wire	Grd	Description	No. Ckt.	ID
N	1	REC STORAGE	2	12	12	1	20	REC	1020	1740			720	REC	20	1	2	12	12	REC OFFICE OFA07	2	N
N	3	REC STORAGE	2	12	12	1	20	REC	1020		1740		720	REC	20	1	2	12	12	REC OFFICE OFA08	4	N
N	5	REC STORAGE	2	12	12	1	20	REC	900			1620	720	REC	20	1	2	12	12	REC OFFICE OFA04	6	N
N	7	REC OFFICE OFA-04	2	12	12	1	20	REC	720	1440			720	REC	20	1	2	12	12	REC OFFICE OFA05	8	N
N	9	REC OFFICE OFA02	2	12	12	1	20	REC	720		1440		720	REC	20	1	2	12	12	REC OFFICE OFA07	10	N
N	11	REC OFFICE OFA01	2	12	12	1	20	REC	720			1440	720	REC	20	1	2	12	12	REC OPEN OFFICE OFA06	12	N
N	13	REC OPEN OFFICE OFA06	2	12	12	1	20	REC	360	740			380	REC	20	1	2	12	12	REC & LIGHTS OUTDOOR A/HU	14	N
N	15	REC OPEN OFFICE OFA06	2	12	12	1	20	REC	360		1860		1500	L	20	1	2	12	12	LIGHTS OFFICES	16	N
N	17	LIGHTS OPEN OFFICE	2	12	12	1	20	L	1200			2100	900	L	20	1	2	12	12	LIGHTS OPEN OFFICE	18	N
N	19	LIGHTS CORRIDOR	2	12	12	1	20	L	675	2250			1575	L	20	1	2	12	12	LIGHTS BULK STORAGE	20	N
N	21	LIGHTS BULK STORAGE	2	12	12	1	20	L	1575		1575				20	1				SPARE	22	N
N	23	LIGHTS OFFICE A04 & A08	2	12	12	1	20	L	680			680			20	1				SPARE	24	N
N	25	SPARE				1	20								20	1				SPARE	26	N
N	27	SPARE				1	20								20	1				SPARE	28	N
N	29	SPARE				1	20								20	1				SPARE	30	N
N	31	SPARE				1	20								20	1				SPARE	32	N
N	33	SPARE				1	20								20	1				SPARE	34	N
N	35	SPARE				1	20								20	1				SPARE	36	N
N	37	SPARE				1	20								20	1				SPARE	38	N
N	39	SPARE				1	20								20	1				SPARE	40	N
N	41	SPARE				1	20								20	1				SPARE	42	N

Total Connected Load: 6170 | 6615 | 5840 (VA/PHASE)

N.E.C. LOAD SUMMARY

Load Types and Codes	Total Load (VA)	Demand Factor	Demand Load (VA)
Air Conditioning (AC)		1.00	
Heating (H)		1.00	
Kitchen Equipment (K)		1.00	
Lighting (L)	8105	1.25	10131
Receptacles (REC)	10520	0.98	10260
Existing (E)		1.25	
Continuous (C)		1.25	
Non-Continuous (NC)		1.00	
Elec. Load Totals:	**18625**		**25391** VA

ELECTRICAL DATA
Total Conn. Load: 19 KVA
Total Conn. Load: 52 Amps
Total Demand Load: 20 KVA
Total Demand Load: 57 Amps
Main Bus Size: 100 Amps

PANEL LEGEND (ID)
ST - Shunt-Trip C.B.; G - GFI C.B.
LB - "Lock-On" C.B.
"C1" - Contactor Designation
--Remodels--
N - New C.B.; EX - Existing C.B.

PANEL INFORMATION
Location: BUILDING 22 BULK STORAGE AREA
Mounting: Flush — Enclosure Type: Nema 1
Fed From: MDP
Equipment Ground Bus: Yes — Bus Material: Copper
Isolated Ground Bus: No — Neutral Size: 100%

PANEL NOTES

Panel Name: J — New Panel — ☐ Main Lugs Only ☑ Main Breaker: 100
Panel Voltage: 208Y/120V, 3 Phase, 4 Wire — Panel A.I.C. Rating: 22k

ID	No. Ckt.	Description	Branch Ckt. No.	Wire	Grd	Breaker P	Trip	Load Code	Phase VA	A	B	C	Load VA	Code	Breaker Trip	P	Branch Ckt. No.	Wire	Grd	Description	No. Ckt.	ID
	1								3035	4355			1320								2	
N	3	AHU SUPPLY FAN	3	8	10	3	35	AC	3035		4355		1320	AC	20	3	3	12	12	AHU RETURN FAN	4	N
	5								3035			4355	1320								6	
N	7	REC AHU	2	12	12	1	20	REC	180	300			120	L	20	1	2	12	12	AHU LIGHTS	8	N
N	9	SPARE																		SPARE	10	N
N	11	SPARE																		SPARE	12	N
	13	BLANK																		BLANK	14	
	15	BLANK																		BLANK	16	
	17	BLANK																		BLANK	18	

Total Connected Load: 4655 | 4355 | 4355 (VA/PHASE)

N.E.C. LOAD SUMMARY

Load Types and Codes	Total Load (VA)	Demand Factor	Demand Load (VA)
Air Conditioning (AC)	13065	1.00	13065
Heating (H)		1.00	
Kitchen Equipment (K)		1.00	
Lighting (L)	120	1.25	150
Receptacles (REC)	180	1.00	180
Existing (E)		1.25	
Continuous (C)		1.25	
Non-Continuous (NC)		1.00	
Elec. Load Totals:	**13365**		**13395** VA

ELECTRICAL DATA
Total Conn. Load: 13 KVA
Total Conn. Load: 37 Amps
Total Demand Load: 13 KVA
Total Demand Load: 37 Amps
Main Bus Size: 100 Amps

PANEL LEGEND (ID)
ST - Shunt-Trip C.B.; G - GFI C.B.
LB - "Lock-On" C.B.
"C1" - Contactor Designation
--Remodels--
N - New C.B.; EX - Existing C.B.

PANEL INFORMATION
Location: BUILDING 22 BULK STORAGE AREA
Mounting: Surface — Enclosure Type: Nema 1
Fed From: MDP
Equipment Ground Bus: Yes — Bus Material: Copper
Isolated Ground Bus: No — Neutral Size: 100%

PANEL NOTES

Panel Name: E CACHE — New Panel — ☐ Main Lugs Only ☑ Main Breaker: 300
Panel Voltage: 208Y/120V, 3 Phase, 4 Wire — Panel A.I.C. Rating: 22k

ID	No. Ckt.	Description	Branch Ckt. No.	Wire	Grd	Breaker P	Trip	Load Code	Phase VA	A	B	C	Load VA	Code	Breaker Trip	P	Branch Ckt. No.	Wire	Grd	Description	No. Ckt.	ID
N	1	REC STERILE STORAGE	2	12	12	1	20	REC	900	1620			720	REC	20	1	2	12	12	REC CLEAN SUPPLY	2	N
N	3	REC STERILE STORAGE	2	12	12	1	20	REC	540		900		360	REC	20	1	2	12	12	REC MECH ROOM	4	N
N	5	REC CLEAN SUPPLY	2	12	12	1	20	REC	900			1620	720	REC	20	1	2	12	12	REC CLEAN SUPPLY\1	6	N
N	7	LIGHTS CLEAN SUPPLY	2	12	12	1	20	L	1425	2400			975	L	20	1	2	12	12	LIGHTS STERILE STORAGE	8	N
N	9	9-ACCU 1	2	1C	10	2	30	AC	1872		3224		1352	AC	30	2	2	10	10	19-ACCU-2	10	N
	11								1872			3224	1352	AC							12	
N	13	9-ACCU 3	2	12	12	2	20	AC	1352	1452			100	AC	20	1	2	12	12	FAN COIL UNITS	14	N
	15								1352		4852		3500								16	
N	17	19-CSG-1	2	12	12	1	20	AC	1000			4500	3500	AC	40	3	3	8	10	19-VAV-1	18	N
N	19	19-CSG-2	2	12	12	1	20	AC	1000	4500			3500								20	
N	21	19-CPU-2	2	12	12	2	20	AC	50		3216		3166	AC	35	3	3	8	10	19-VAV-2	22	N
	23								50			3216	3166	AC							24	
N	25	19-CPU-3	2	12	12	2	20	AC	50	3216			3166								26	
	27								50		100		50	AC	20	2	2	12	12	19-CPU-5	28	N
N	29	19-CPU-4	2	12	12	2	20	AC	50			100	50								30	
	31								50	50										SPARE	32	N
N	33	SPARE				1	20													SPARE	34	N
N	35	SPARE				1	20													SPARE	36	N
N	37	SPARE				1	20													SPARE	38	N
N	39	SPARE				1	20													SPARE	40	N
N	41	SPARE				1	20													SPARE	42	N

Total Connected Load: 13238 | 12292 | 12660 (VA/PHASE)

N.E.C. LOAD SUMMARY

Load Types and Codes	Total Load (VA)	Demand Factor	Demand Load (VA)
Air Conditioning (AC)	31650	1.00	31650
Heating (H)		1.00	
Kitchen Equipment (K)		1.00	
Lighting (L)	2400	1.25	3000
Receptacles (REC)	4140	1.00	4140
Existing (E)		1.25	
Continuous (C)		1.25	
Non-Continuous (NC)		1.00	
Elec. Load Totals:	**38190**		**38790** VA

ELECTRICAL DATA
Total Conn. Load: 38 KVA
Total Conn. Load: 106 Amps
Total Demand Load: 39 KVA
Total Demand Load: 108 Amps
Main Bus Size: 400 Amps

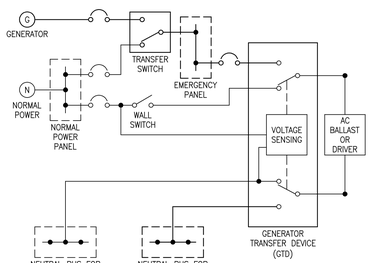
PANEL LEGEND (ID)
ST - Shunt-Trip C.B.; G - GFI C.B.
LB - "Lock-On" C.B.
"C1" - Contactor Designation
--Remodels--
N - New C.B.; EX - Existing C.B.

PANEL INFORMATION
Location: BUILDING 19 CLEAN SUPPLY STORAGE
Mounting: Surface — Enclosure Type: Nema 1
Fed From: ATS E CACHE
Equipment Ground Bus: Yes — Bus Material: Copper
Isolated Ground Bus: No — Neutral Size: 100%

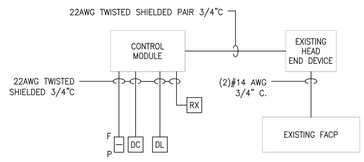
PANEL NOTES

LIGHTING FIXTURE SCHEDULE

TYPE	DIMENSIONS	DESCRIPTION	LAMPS QTY	LAMPS TYPE	BALLAST QTY	VOLTS	MOUNTING	REMARKS
A1	2'x2'	1.25" PRISMATIC ACRYLIC LENS TROFFER	4	F17T8	2	120	RECESSED GRID	GENERAL PURPOSE LTG
A2	2'x4'	1.25" PRISMATIC ACRYLIC LENS TROFFER	3	T8 32W	2	120	RECESSED GRID	GENERAL PURPOSE LTG
B	N/A	CFL EXTERIOR VANDAL RESISTANT SCONCE	2	2/26W	1	120	WALL MOUNTED	INTEGRAL PHOTOCELL CONTROL
X	N/A	EXIT SIGN		LED	1	120	SURFACE	EGRESS

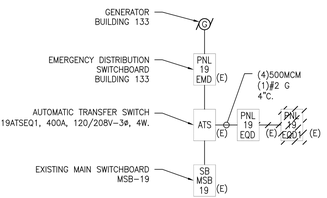


TYPICAL GENERATOR TRANSFER DEVICE (GTD) DETAIL
SCALE: NONE

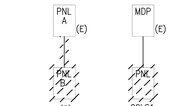


TYPICAL CARD READER/DOOR LOCK RISER
SCALE: NONE

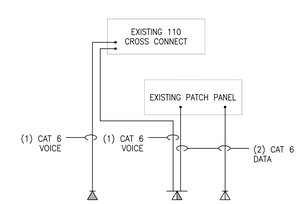
NOTE:
1. IN THE EVENT OF FIRE ALARM, ALL DOOR LOCKS ARE TO RELEASE



BUILDING 19 PARTIAL SINGLE LINE – DEMOLITION
SCALE: NONE



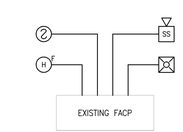
BUILDING 22 PARTIAL SINGLE LINE – DEMOLITION
SCALE: NONE



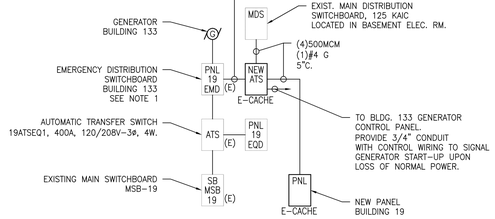
TYPICAL DATA/VOICE RISER
SCALE: NONE

NONE

DATA VOICE NOTES:
1. CONTRACTOR IS TO PROVIDE ALL OUTLETS AND CAT 6 CABLE BACK TO TELECOM ROOM AND TERMINATE CABLES ON EXISTING NETWORK PATCH PANELS AND 110 CROSS CONNECT.
2. VOICE CABLE TO BE SPLIT FOR TWO VOICE DROPS.

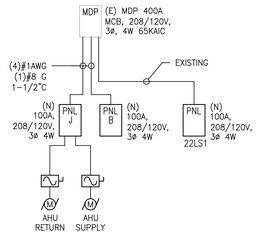


TYPICAL FIRE ALARM RISER
SCALE: NONE



BUILDING 19 PARTIAL SINGLE LINE – NEW WORK
SCALE: NONE

NOTE:
1. PROVIDE (1) NEW 300A, 3P BREAKER IN PANEL EMD.
2. PROVIDE (1) NEW 300A, 3P BREAKER IN SWITCHBOARD MDS



BUILDING 22 PARTIAL SINGLE LINE – NEW WORK
SCALE: NONE

NOTE:
PROVIDE (2) NEW 100A, 3P BREAKERS IN MDP FOR PANELS J AND B.

Panel Name: BASEMENT — Existing Panel — ☑ Main Lugs Only ☐ Main Breaker:
Panel Voltage: 208Y/120V, 3 Phase, 4 Wire — Panel A.I.C. Rating: 25k

ID	No. Ckt.	Description	Branch Ckt. No.	Wire	Grd	Breaker P	Trip	Load Code	Phase VA	A	B	C	Load VA	Code	Breaker Trip	P	Branch Ckt. No.	Wire	Grd	Description	No. Ckt.	ID
EX	1	REC RM 113	2	12	12	1	20	REC	900	1800			900	REC	20	1	2	12	12	REC RM 113	2	EX
EX	3	REC RM 113	2	12	12	1	20	REC	900		1800		900	REC	20	1	2	12	12	REC RM 113	4	EX
EX	5	REC RM 113	2	12	12	1	20	REC	900			1800	900	REC	20	1	2	12	12	REC RM 113	6	EX
EX	7	CIRCULATOR PUMP SERVICE RM	2	12	12	1	20	REC	1200	2200			1000	L	20	1	2	12	12	STAIR RM LIGHTS	8	EX
EX	9	WELDING REC SERVICE RM	3or2	6	10	2	50	NC	4160		5060		900	REC	20	1	2	12	12	REC GR SWITCH	10	EX
	11								4160			5060	900	REC	20	1	2	12	12	PANEL REC	12	EX
	13								300	300										BLANK	14	EX
N	15	22-P-1 AND 22-P-2	3	12	12	3	20	C	300		300									BLANK	16	EX
	17								300			300								BLANK	18	EX
EX	19	BLANK																		BLANK	20	EX
EX	21	BLANK																		BLANK	22	EX
EX	23	BLANK																		BLANK	24	EX
EX	25	BLANK																		BLANK	26	EX
EX	27	BLANK																		BLANK	28	EX
EX	29	BLANK																		BLANK	30	EX

Total Connected Load: 4300 | 7160 | 7160 (VA/PHASE)

N.E.C. LOAD SUMMARY

Load Types and Codes	Total Load (VA)	Demand Factor	Demand Load (VA)
Air Conditioning (AC)		1.00	
Heating (H)		1.00	
Kitchen Equipment (K)		1.00	
Lighting (L)	1000	1.25	1250
Receptacles (REC)	8400	1.00	8400
Existing (E)		1.25	
Continuous (C)	900	1.25	1125
Non-Continuous (NC)	8320	1.00	8320
Elec. Load Totals:	**18620**		**19095** VA

ELECTRICAL DATA
Total Conn. Load: 19 KVA
Total Conn. Load: 52 Amps
Total Demand Load: 19 KVA
Total Demand Load: 53 Amps
Main Bus Size: 225 Amps

PANEL LEGEND (ID)
ST - Shunt-Trip C.B.; G - GFI C.B.
LB - "Lock-On" C.B.
"C1" - Contactor Designation
--Remodels--
N - New C.B.; EX - Existing C.B.

PANEL INFORMATION
Location: Building 22 Basement
Mounting: Surface — Enclosure Type: Nema 1
Fed From: MDP
Equipment Ground Bus: Yes — Bus Material: Existing
Isolated Ground Bus: No — Neutral Size: 100%

PANEL NOTES

Panel Name: 22LS1 — New Panel — ☐ Main Lugs Only ☑ Main Breaker: 100
Panel Voltage: 208Y/120V, 3 Phase, 4 Wire — Panel A.I.C. Rating: 22k

ID	No. Ckt.	Description	Branch Ckt. No.	Wire	Grd	Breaker P	Trip	Load Code	Phase VA	A	B	C	Load VA	Code	Breaker Trip	P	Branch Ckt. No.	Wire	Grd	Description	No. Ckt.	ID
N	1	EXIT LIGHTS STAIR 3	2	12	12	1	20	L	500	1000			500	L	20	1	2	12	12	EXIT LIGHTS STAIR 1	2	N
N	3	EXIT LIGHTS STAIR 3	2	12	12	1	20	L	500		1000		500	L	20	1	2	12	12	EXIT LIGHTS STAIR 2	4	N
N	5	EXIT LIGHTS STAIR 1	2	12	12	1	20	L	500			1000	500	L	20	1	2	12	12	EXIT LIGHTS STAIR 2	6	N
N	7	OUTSIDE LIGHTS	2	12	12	1	20	L	500	1000			500	L	20	1	2	12	12	XMAS LIGHTS	8	N
N	9	ENTRANCE DOOR OPERATOR	2	12	12	1	20	NC	500		1000		500	C	20	1	2	12	12	TELEPHONES CANTEEN OFFICE	10	N
N	11	FIRE ALARM	2	12	12	1	20	C	500			1000	500	C	20	1	2	12	12	2ND FLOOR E CLOSET	12	N
N	13	CPAC CORRIDOR REC	2	12	12	1	20	REC	500	1000			500	REC	20	1	2	12	12	HEATER REC BY SLIDER DOORS	14	N
N	15	HALL LTS 1ST FLOOR	2	12	12	1	20	L	500		1000		500	REC	20	1	2	12	12	HEATER REC BY SLIDER DOORS	16	N
N	17	HEATER REC BY SLIDER DOORS	2	12	12	1	20	REC	500			1000	500	NC	20	1	2	12	12	AUTO SLIDING GLASS DOORS	18	N
N	19	FIRE ALARM PANEL	2	12	12	1	20	C	500	1000			500								20	
N	21	REC RETAIL STORE	2	12	12	1	20	REC	500		1000		500	AC	30	3	3	10	10	AC ROOM 104	22	N
N	23	REC RETAIL STORE	2	12	12	1	20	REC	500			1000	500								24	
N	25	OFFICE AND ENTRANCE E LTG	2	12	12	1	20	L	1200	1200					20	1				SPARE	26	N
N	27	BULK STORAGE E LTG	2	12	12	1	20	L	1650		1650				20	1				SPARE	28	N
N	29	FREEZE PROTECTION PMP	2	12	12	1	20	C	120			120			20	1				SPARE	30	N

Total Connected Load: 5200 | 5650 | 4120 (VA/PHASE)

N.E.C. LOAD SUMMARY

Load Types and Codes	Total Load (VA)	Demand Factor	Demand Load (VA)
Air Conditioning (AC)	1500	1.00	1500
Heating (H)		1.00	
Kitchen Equipment (K)		1.00	
Lighting (L)	7350	1.25	9188
Receptacles (REC)	3000	1.00	3000
Existing (E)		1.25	
Continuous (C)	2120	1.25	2650
Non-Continuous (NC)	1000	1.00	1000
Elec. Load Totals:	**14970**		**17338** VA

ELECTRICAL DATA
Total Conn. Load: 15 KVA
Total Conn. Load: 42 Amps
Total Demand Load: 17 KVA
Total Demand Load: 48 Amps
Main Bus Size: 225 Amps

PANEL LEGEND (ID)
ST - Shunt-Trip C.B.; G - GFI C.B.
LB - "Lock-On" C.B.
"C1" - Contactor Designation
--Remodels--
N - New C.B.; EX - Existing C.B.

PANEL INFORMATION
Location: ELECTRICAL CLOSET BLDG 22
Mounting: Surface — Enclosure Type: Nema 1
Fed From: MDP
Equipment Ground Bus: Yes — Bus Material: Copper
Isolated Ground Bus: No — Neutral Size: 100%

PANEL NOTES

CONSTRUCTION BID DOCUMENTS
FULLY SPRINKLERED

NO.	DESCRIPTION	DATE

CONSULTANTS:
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ARCHITECT/ENGINEERS:
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Drawing Title: ELECTRICAL DETAILS, DIAGRAMS AND SCHEDULES
Approved: Project Director
Project Title: LEBANON - EMERGENCY CACHE
Location: 1700 SOUTH LINCOLN AVENUE LEBANON PA, 17042
Date: 04-10-2013 — Checked: GREGG — Drawn: READ
Project Number: VA595-11-127
Building Number: BLDGS. 19 & 22
Drawing Number: E6.01
Dwg. 47 of 47

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231